

図1 (FIG. 1)

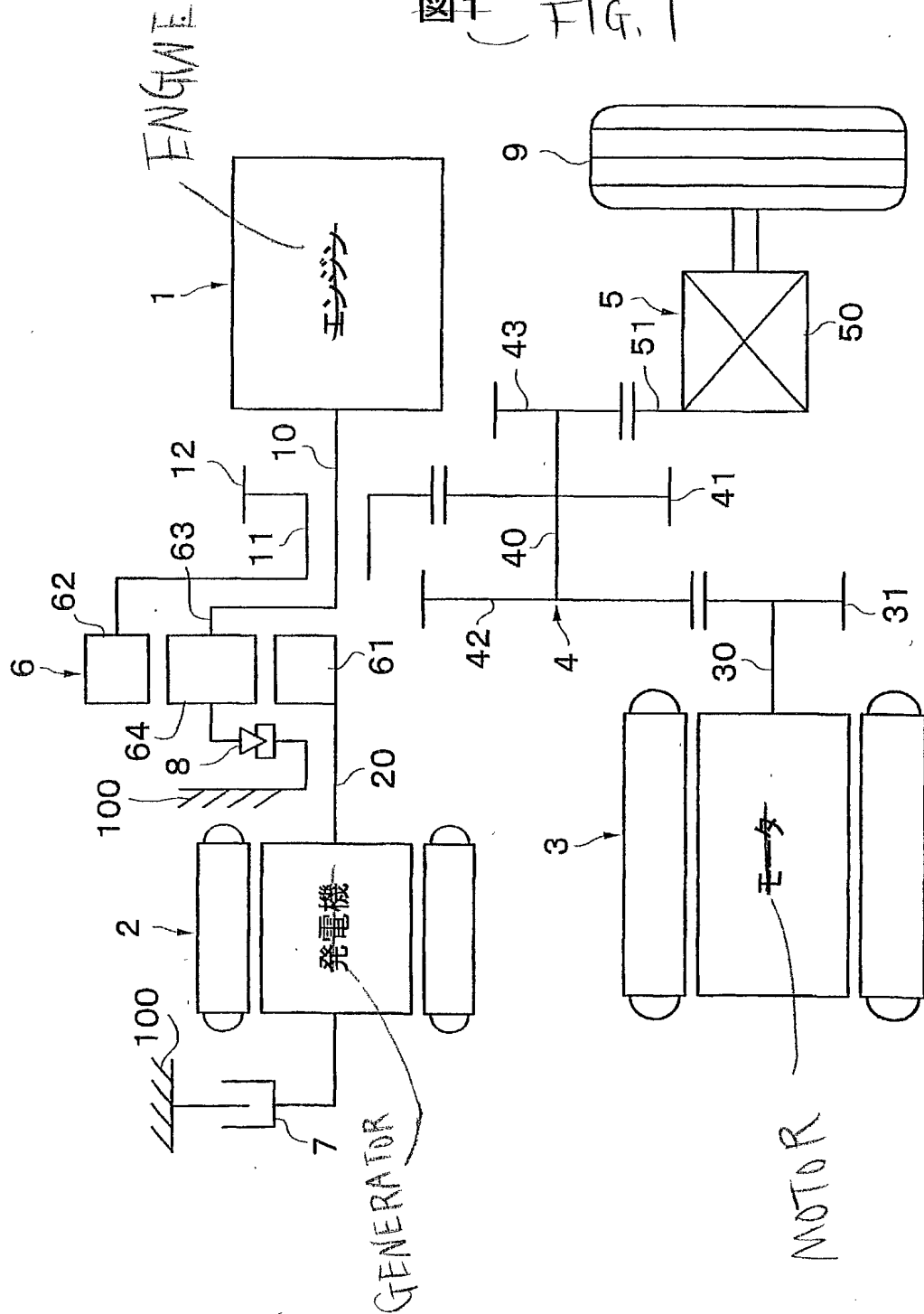


FIG. 2

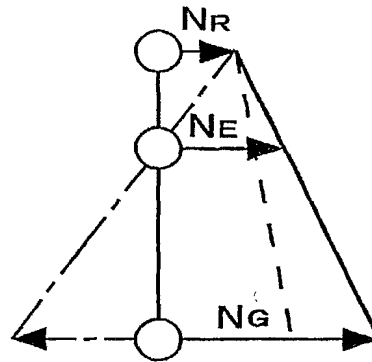
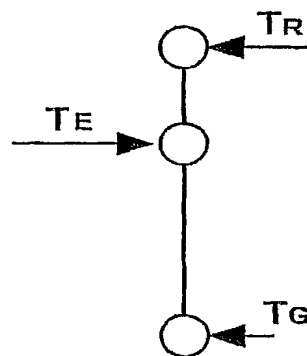


FIG. 3



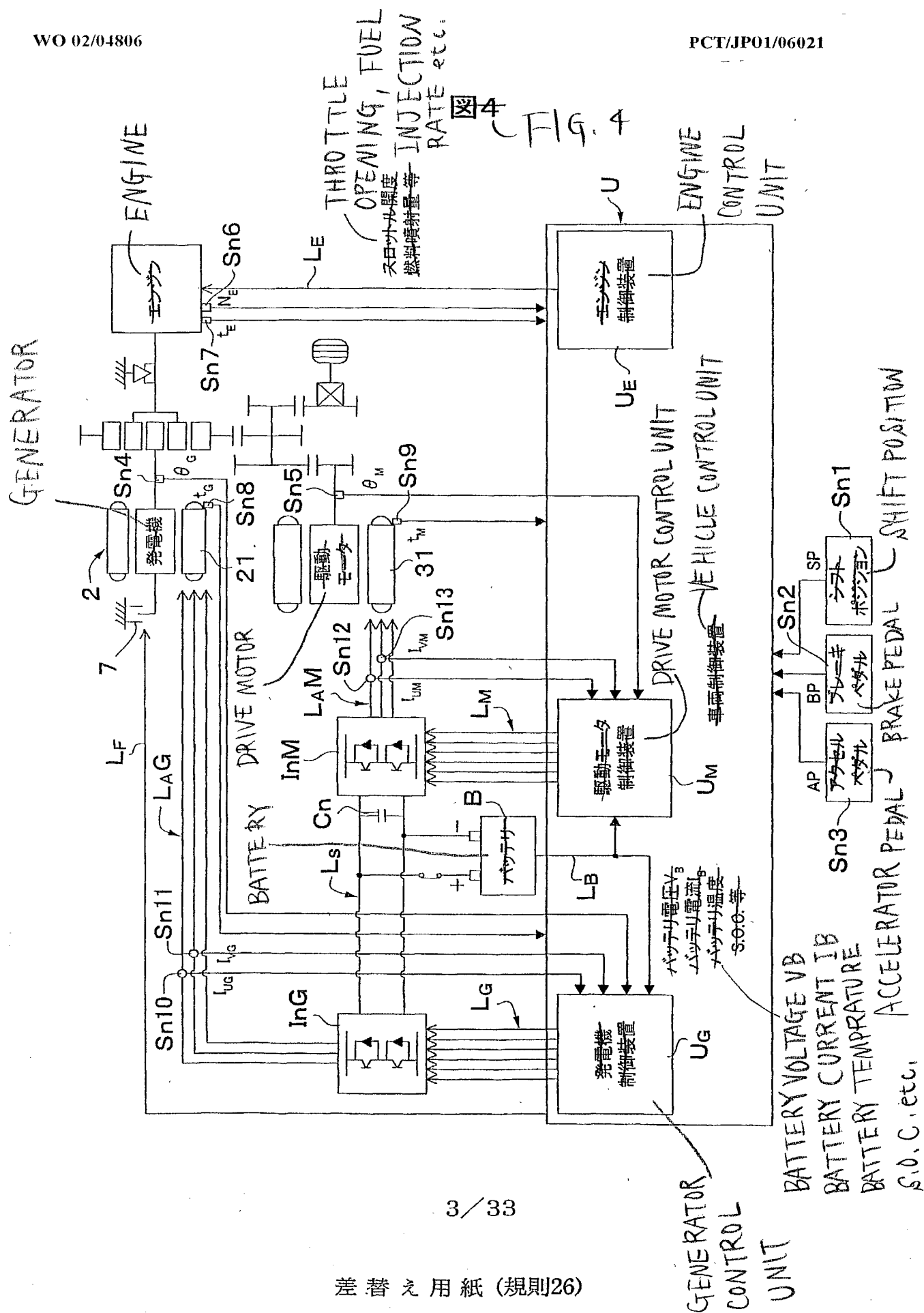


図5 FIG. 5

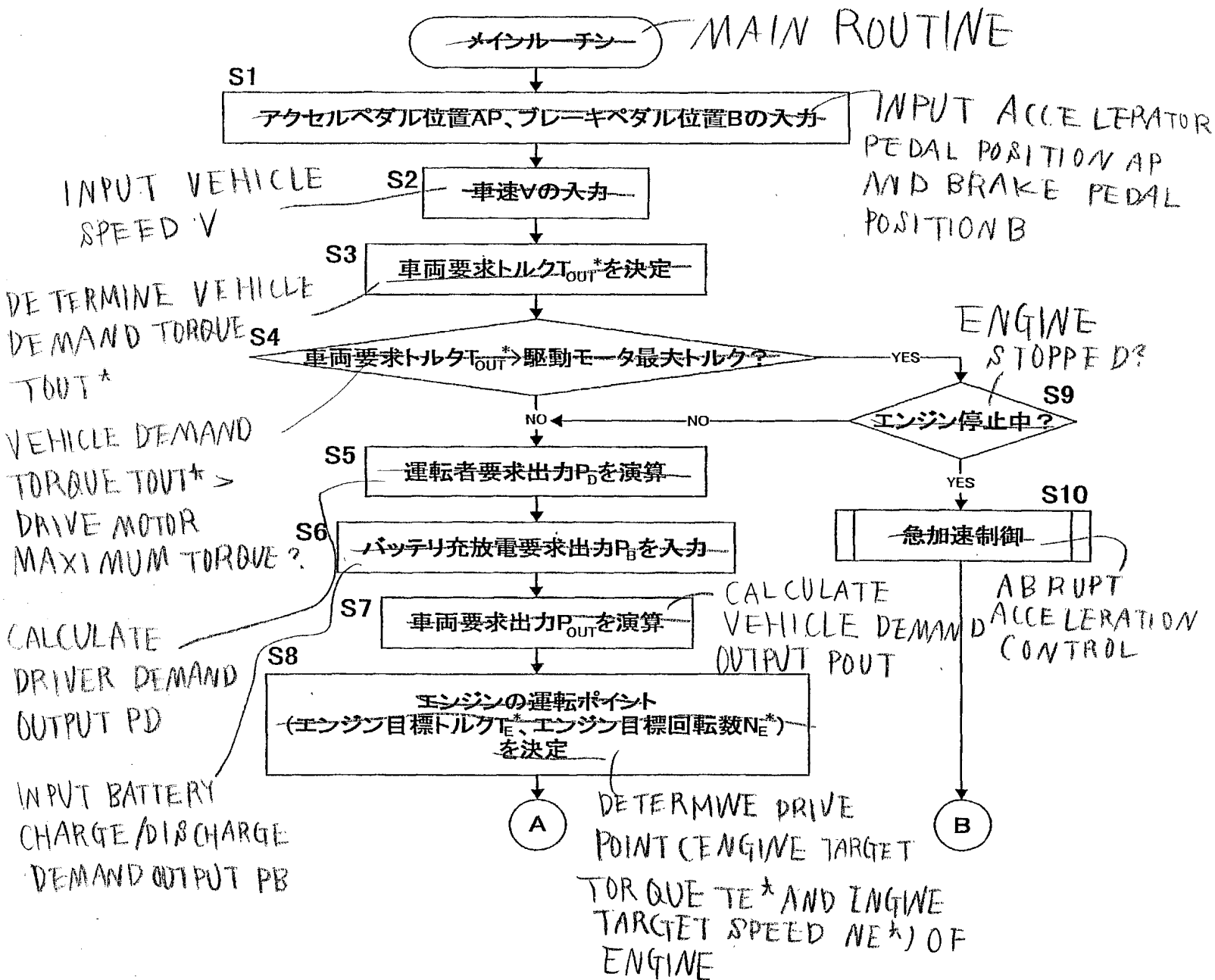


図6 FIG. 6

ENGINE RUNNING RANGER?

ENGINE RUNNING?

ENGINE START CONTROL

ENGINE CONTROL

DETERMINE GENERATOR TARGET SPEED NG*

GENERATOR TARGET SPEED NG* > FIRST PREDETERMINED SPEED?

GENERATOR BRAKE OFF?

GENERATOR BRAKE ON?

5/33

GENERATOR BRAKE ON CONTROL

GENERATOR BRAKE OFF CONTROL

GENERATOR SPEED CONTROL

ESTIMATE DRIVE SHAFT TORQUE TR → OUT THROUGH PLANETARY

DETERMINE DRIVE MOTOR TARGET TORQUE TM

RETURN

DRIVE MOTOR CONTROL

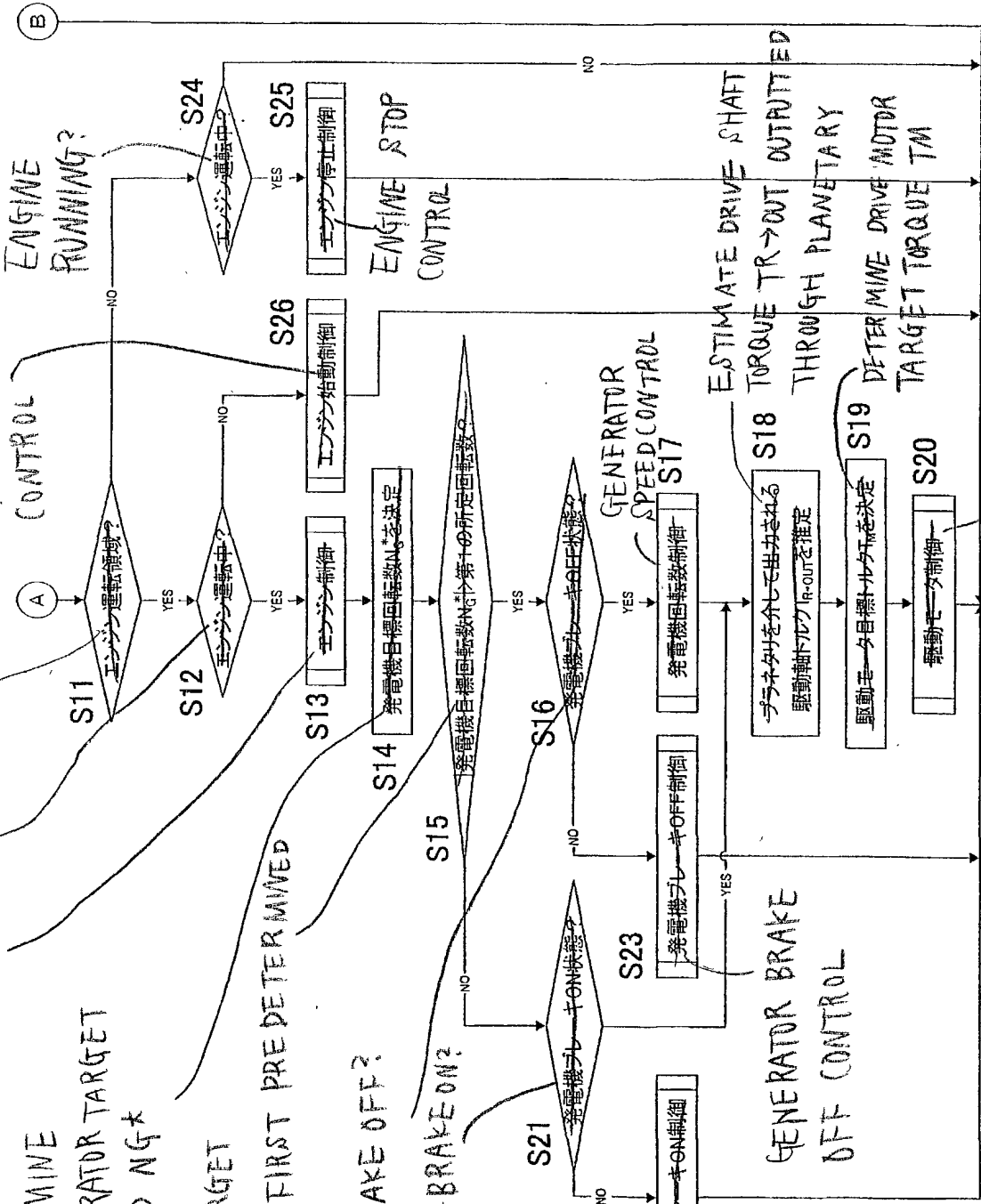


図7 FIG. 7

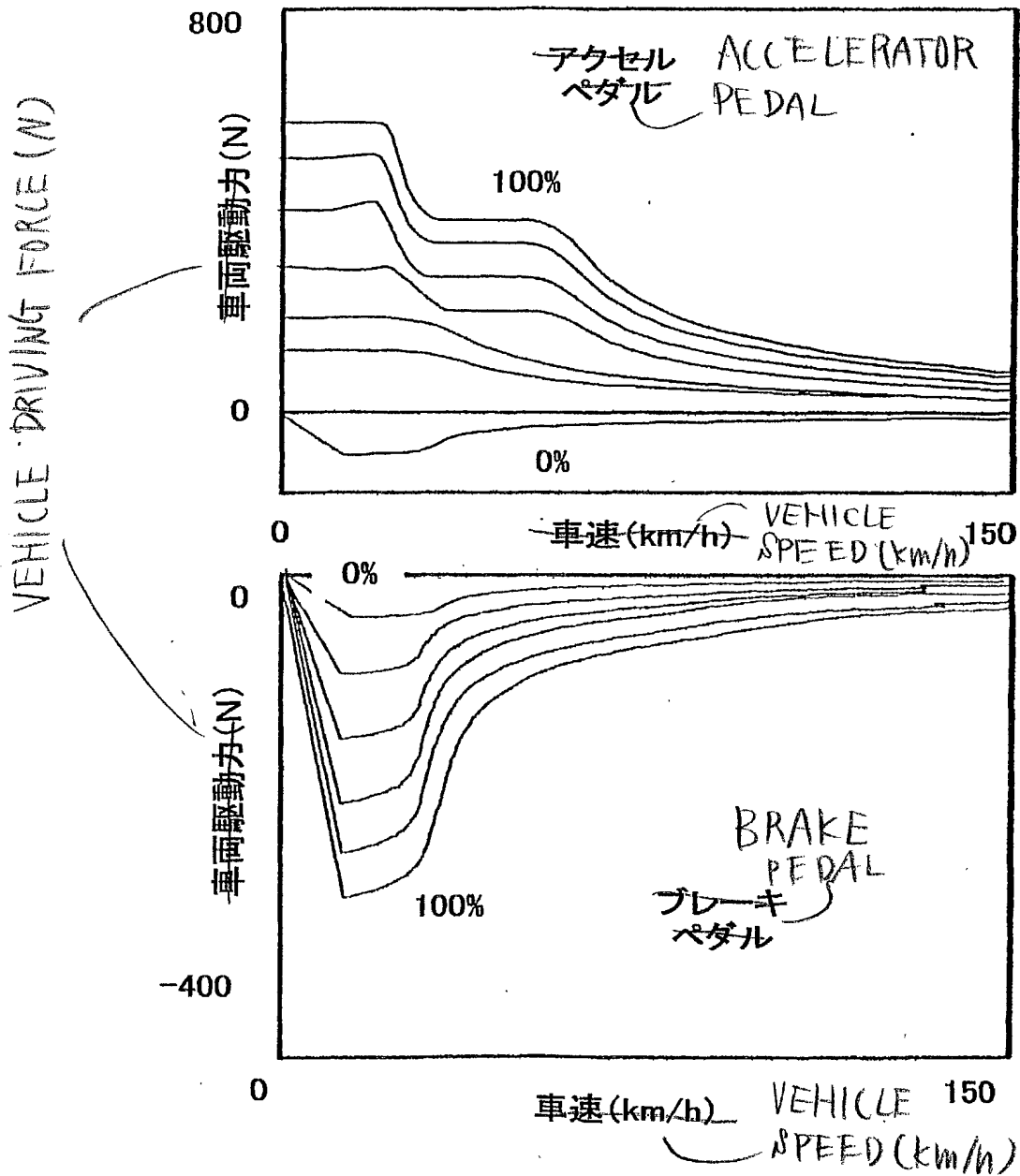


図8
FIG. 8

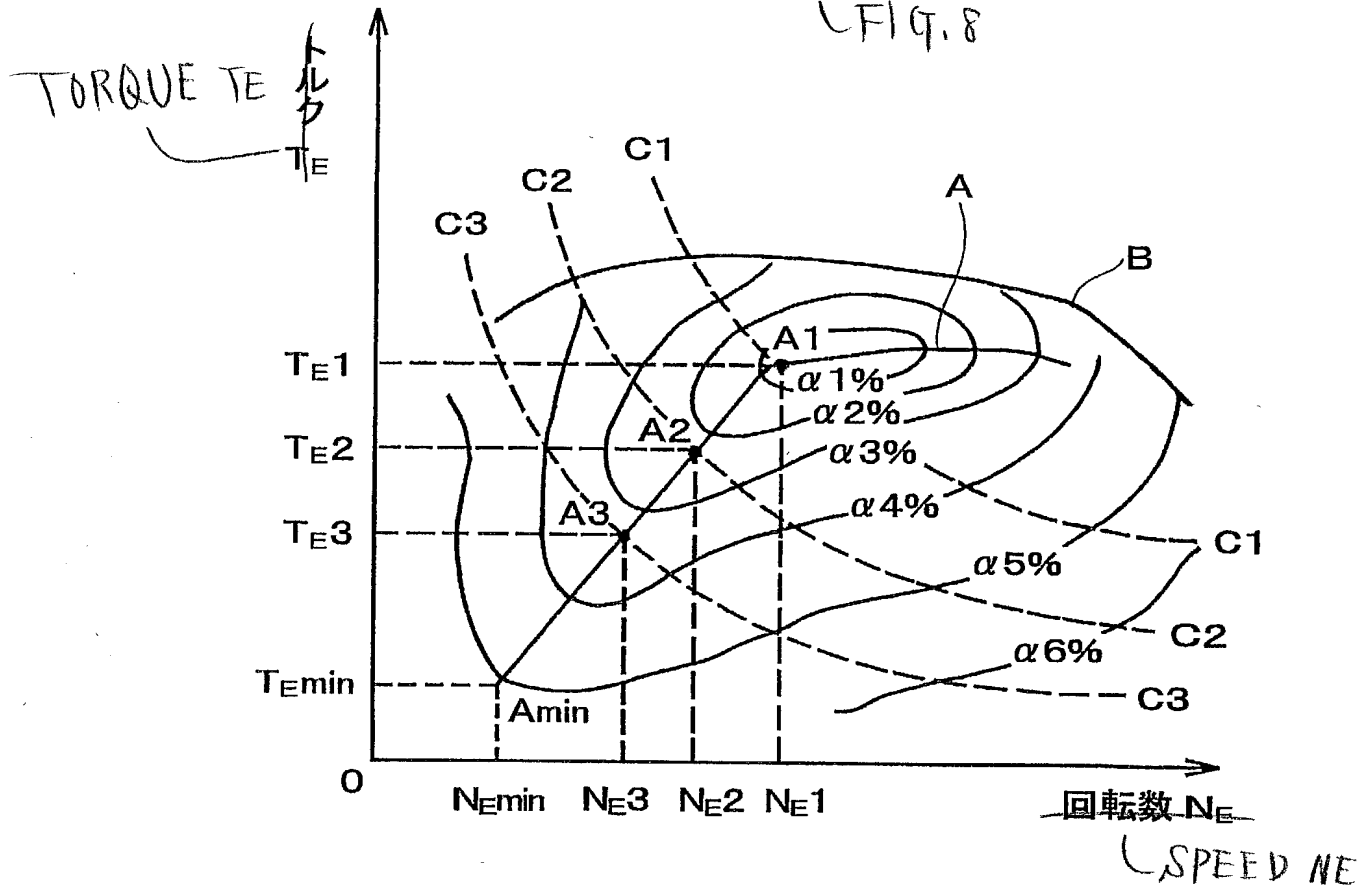
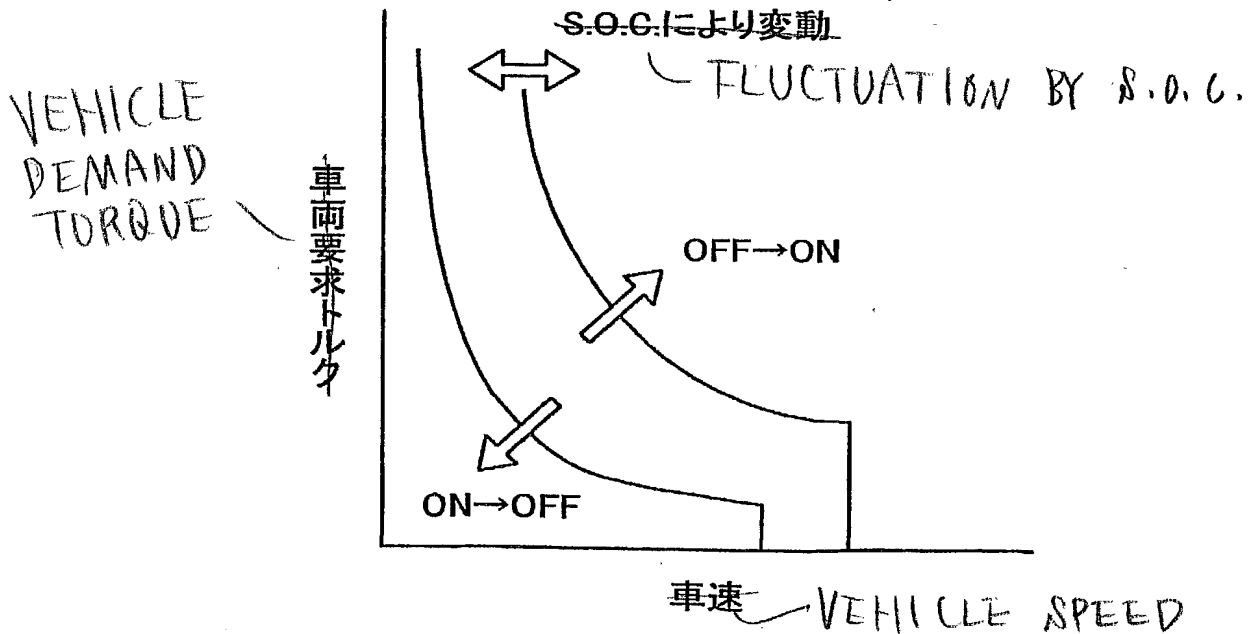


図9
FIG. 9



ABRUPT ACCELERATION
CONTROL ROUTINE図10-
FIG. 10INPUT VEHICLE DEMAND
TORQUE T_{OUT}^* SET MAXIMUM TORQUE
OF DRIVE MOTOR TO
DRIVE MOTOR TARGET
TORQUE T_M^* SET DIFFERENCE
TORQUE BETWEEN
VEHICLE DEMAND
TORQUE T_{OUT}^* AND
DRIVE MOTOR TARGET
TORQUE (DRIVE MOTOR
MAXIMUM TORQUE)
 T_M^* TO GENERATOR
TARGET TORQUE T_G^*

急加速制御ルーチン

S101

車両要求トルク T_{OUT}^* の入力

S102

駆動モータ目標トルク T_M^* に
駆動モータの最大トルクを設定

S103

車両要求トルク T_{OUT}^* と駆動モータ目標トルク
(駆動モータ最大トルク) T_M^* の差トルクを
発電機目標トルク T_G^* に設定

S104

駆動モータ制御

DRIVE MOTOR
CONTROL

S105

発電機トルク制御

GENERATOR
TORQUE CONTROL

リターン

RETURN

図11
FIG. 11

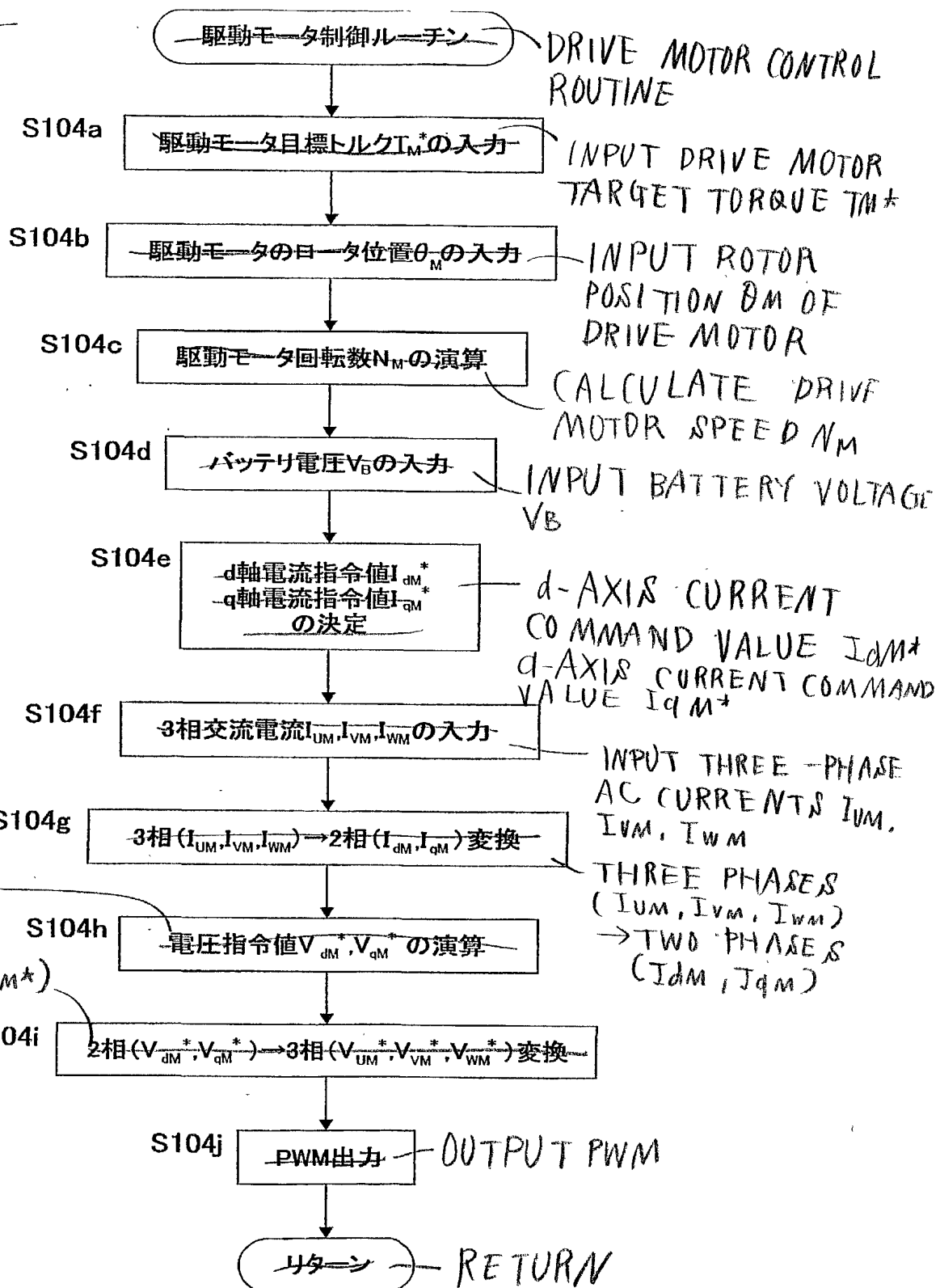


図12
FIG. 12

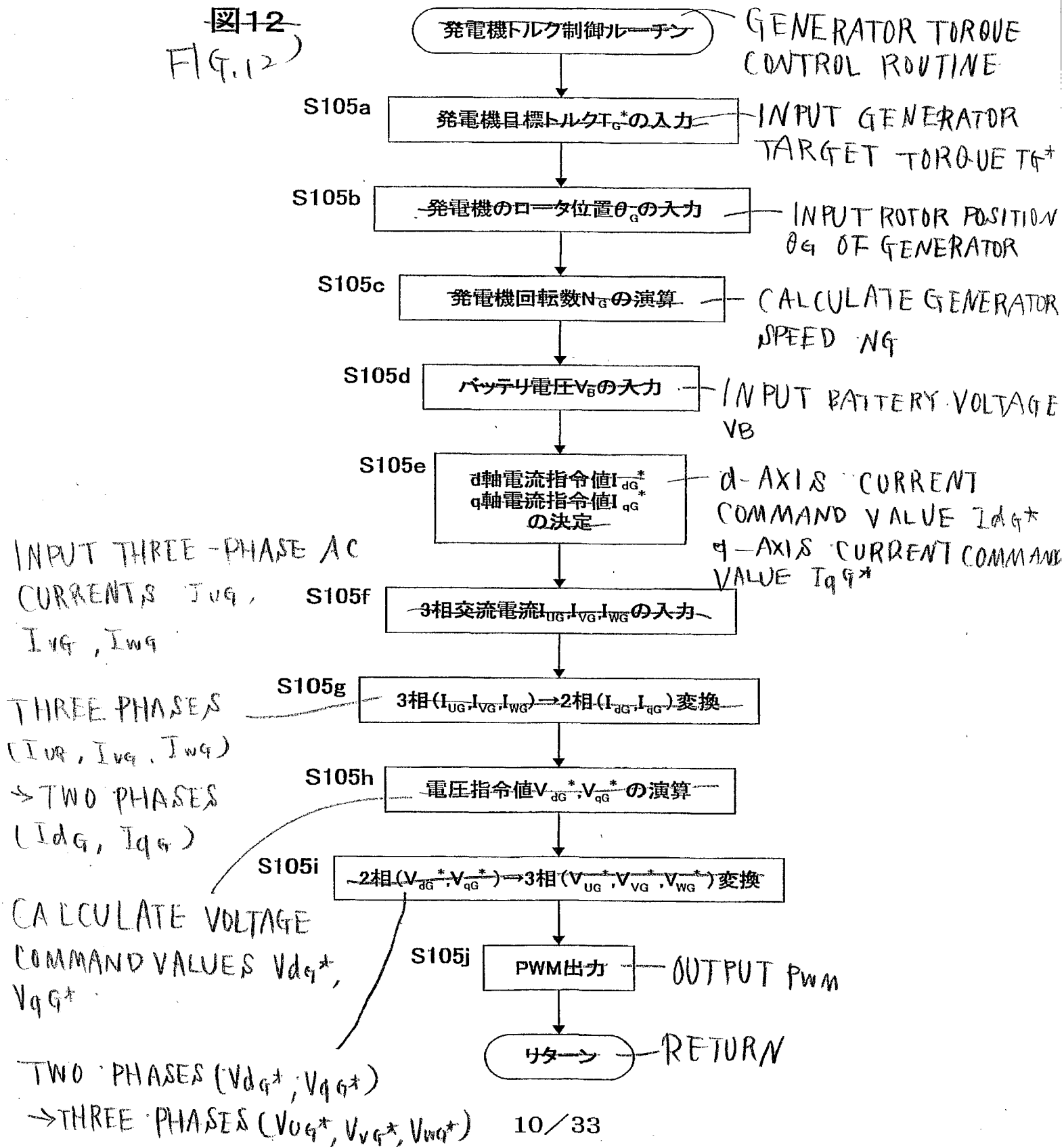
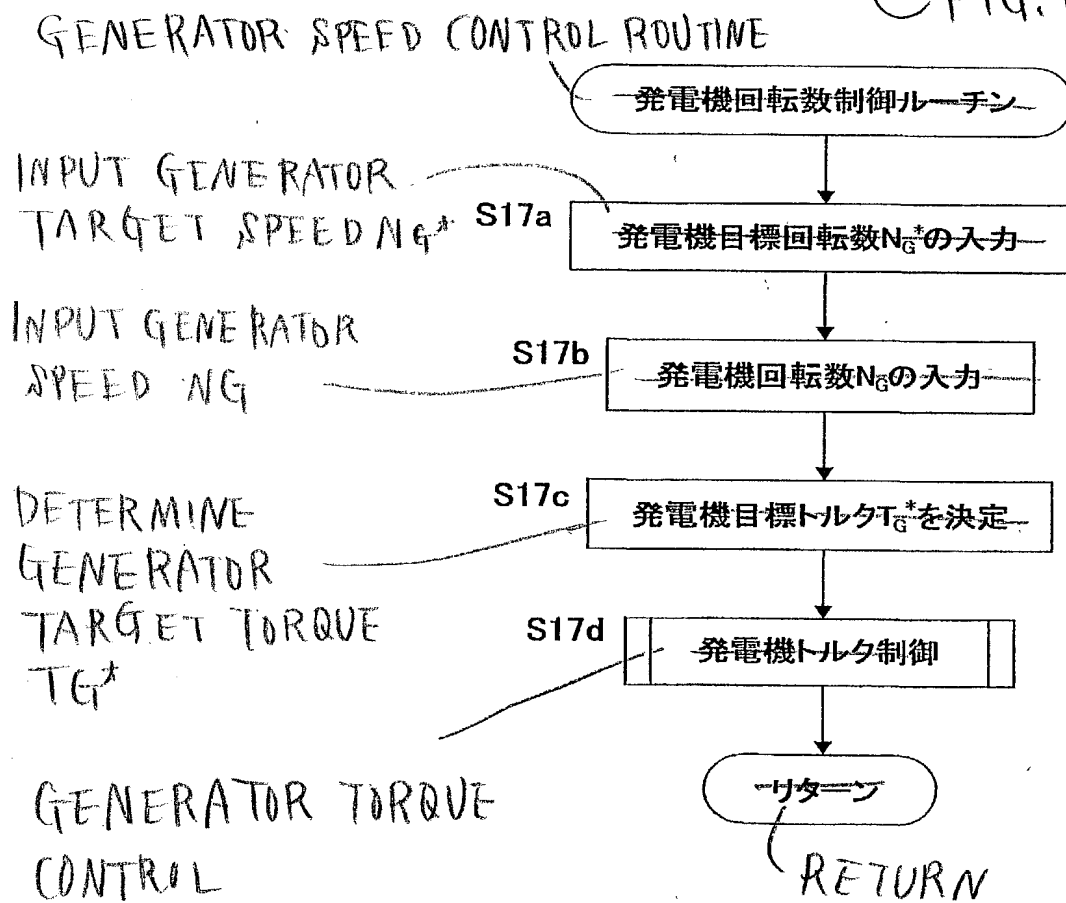


図13
FIG. 13

GENERATOR BRAKE ON CONTROL ROUTINE

PCT/JP01/06021

図14

FIG. 14

発電機ブレーキON制御ルーチン

SET GENERATOR
TARGET SPEED N_G^*
WITH 0rpmS22a 発電機目標回転数 N_G^* に 0rpm を設定GENERATOR SPEED
CONTROL

S22b 発電機回転数制御

ESTIMATE DRIVE
SHAFT TORQUE T_R
→ OUT OUTPUTTED
THROUGH PLANETARYS22c プラネタリを介して出力される
駆動軸トルク T_R → OUT を推定S22d 駆動モータ目標トルク T_M^* に
 T_R → OUT を設定SET DRIVE
MOTOR TARGET
TORQUE T_M^*
WITH T_R → OUT

S22e 駆動モータ制御

DRIVE MOTOR
CONTROLGENERATOR SPEED N_G
SECOND PRE DETERMINED
SPEED?S22f 発電機回転数 N_G < 第2の所定回転数?

GENERATOR BRAKE ON

S22g 発電機ブレーキON

ESTIMATE DRIVE
SHAFT TORQUE T_R
→ OUT OUTPUTTED
THROUGH PLANETARYS22h プラネタリを介して出力される
駆動軸トルク T_R → OUT を推定S22i 駆動モータ目標トルク T_M^* に
 T_R → OUT を設定SET DRIVE MOTOR
CONTROL

S22j 駆動モータ制御

DRIVE MOTOR
CONTROL

S22k 発電機ブレーキON状態で所定時間経過?

PREDETERMINED
TIME ELAPSED
IN GENERATOR
BRAKE ON?

S22l 発電機へのSW停止

SW STOP OF GENERATOR

リターン

RETURN

GENERATOR BRAKE OFF CONTROL ROUTINE

PCT/JP01/06021

図15

FIG. 15

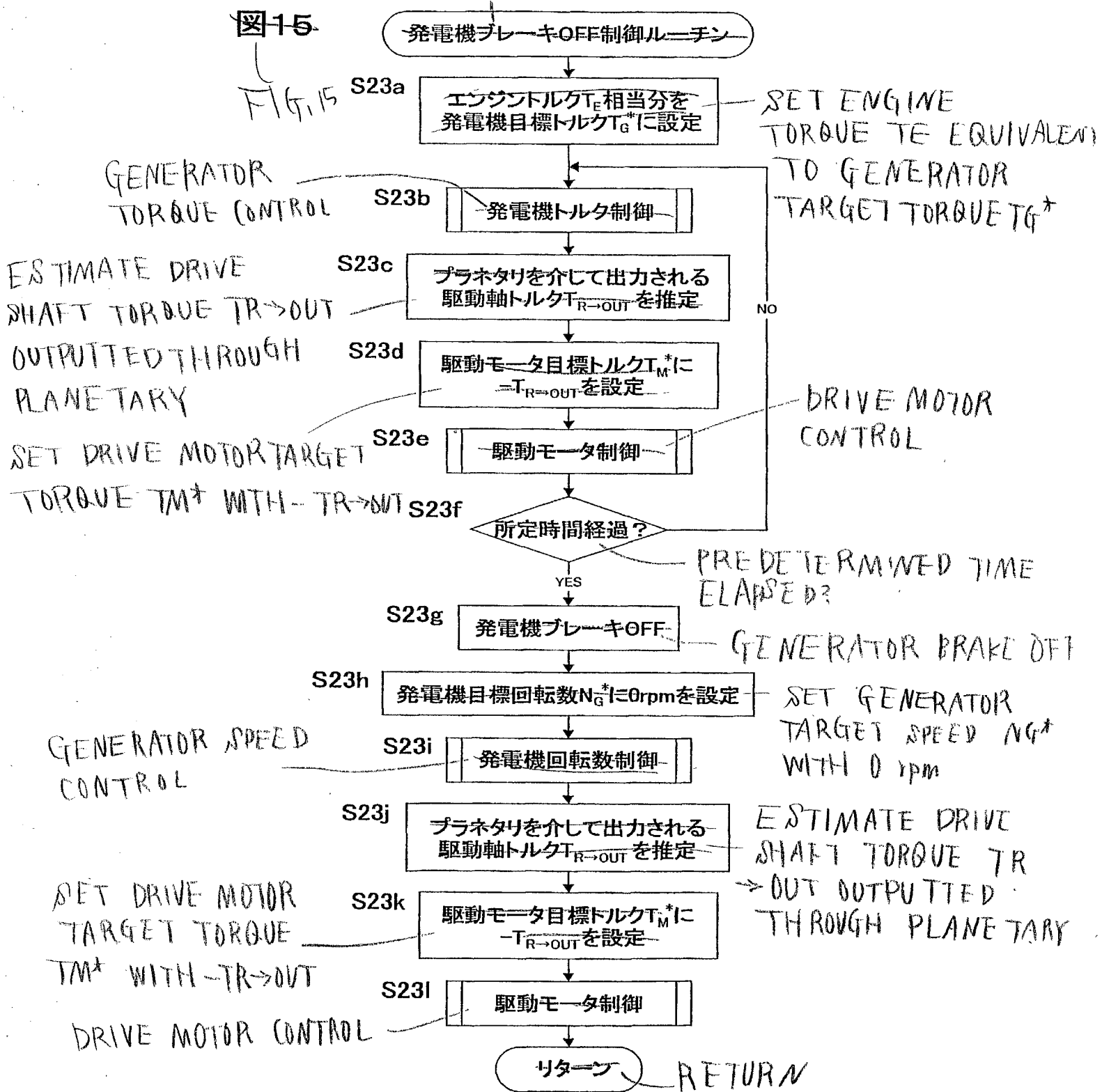
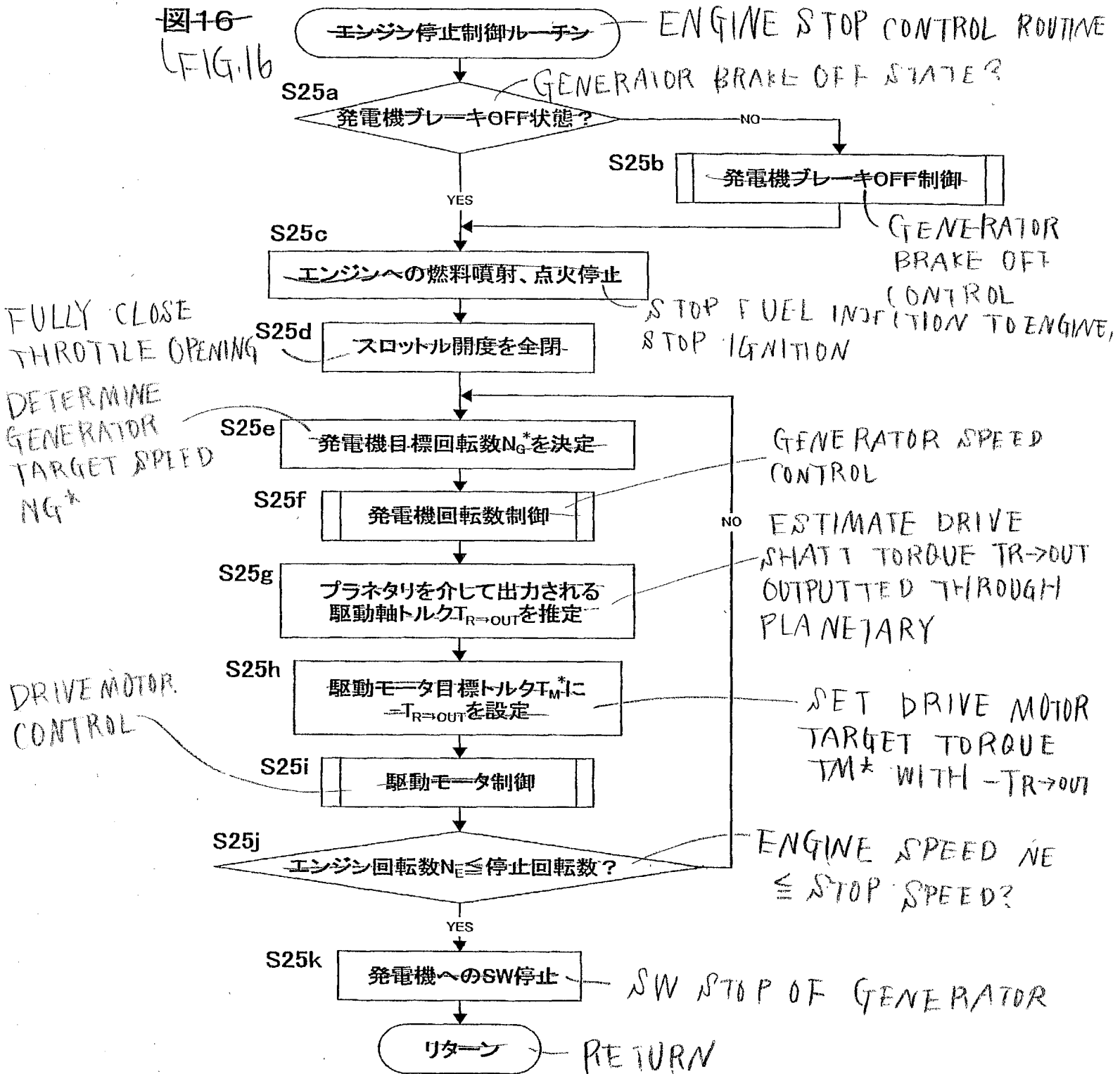


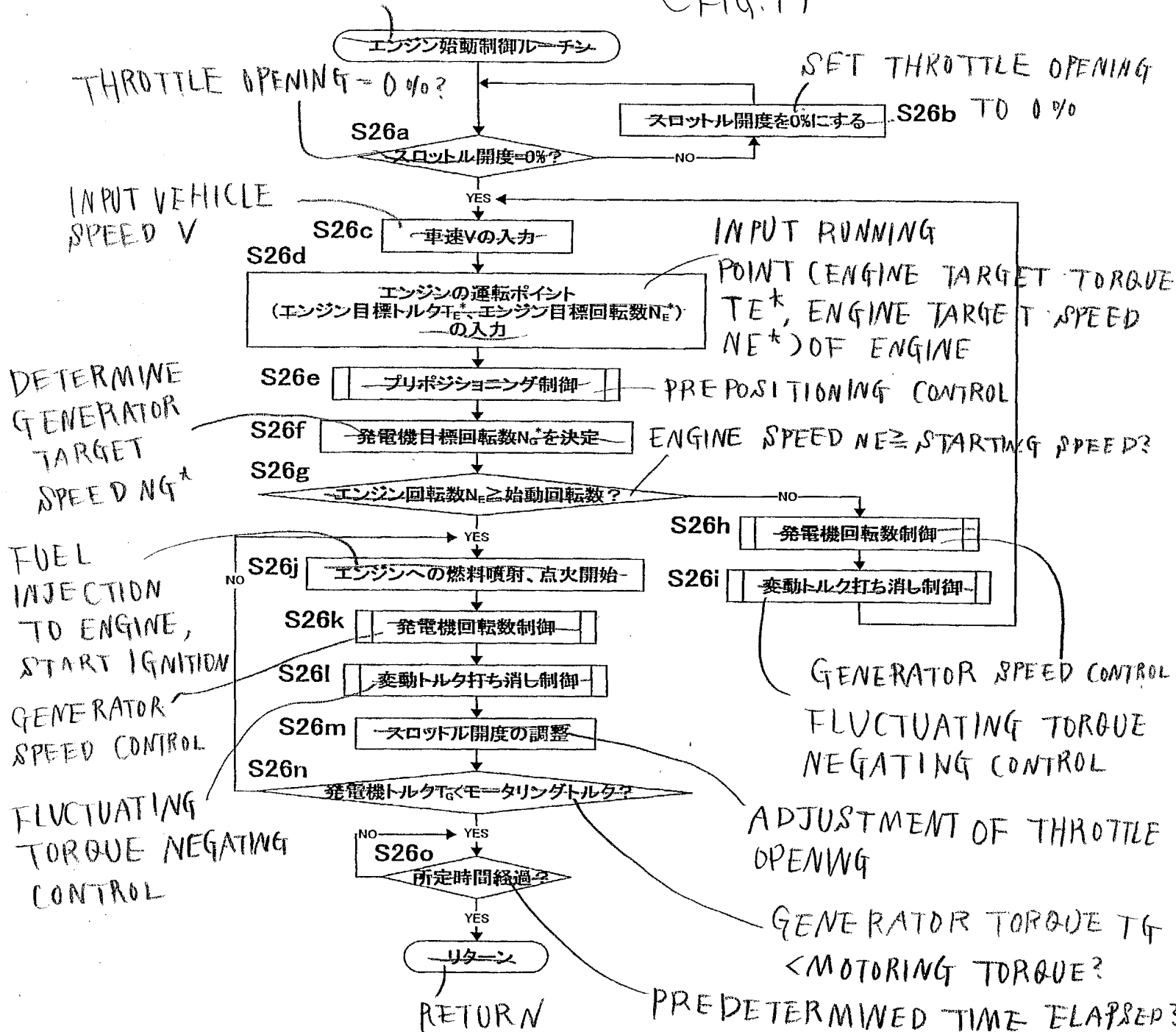
図16
FIG. 16

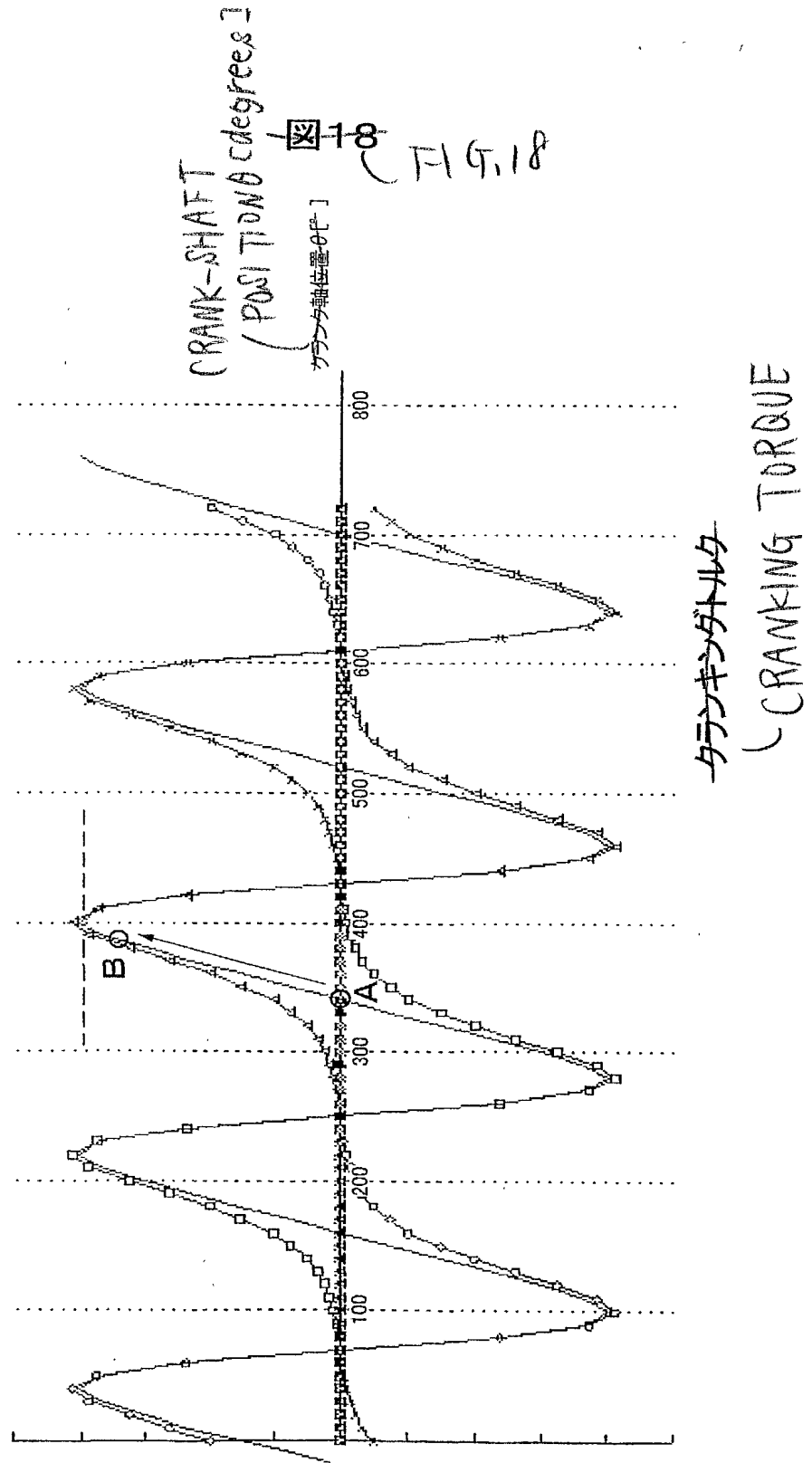


ENGINE START CONTROL ROUTINE

FIG. 17

FIG. 17





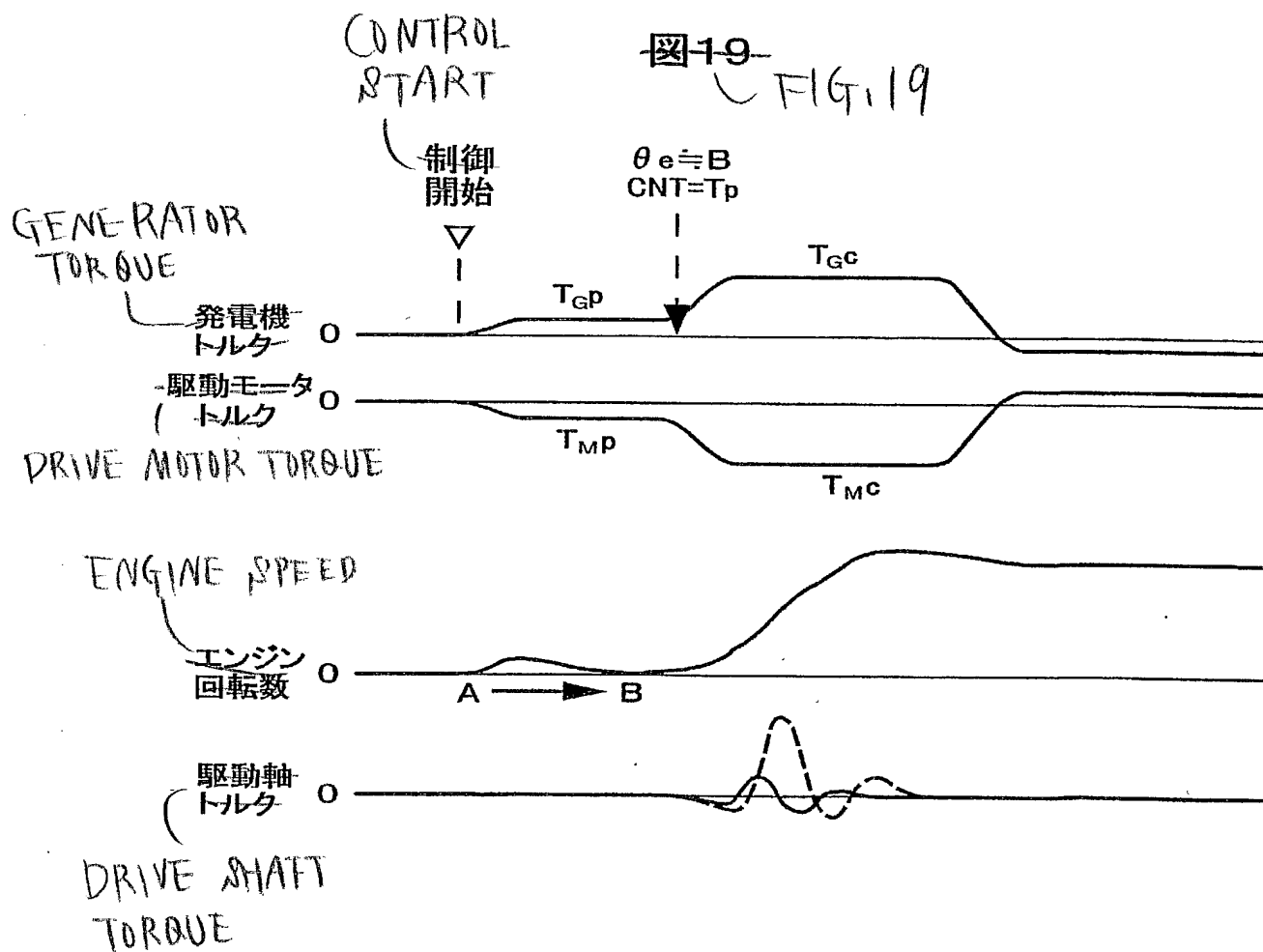


図20

(FIG. 20)

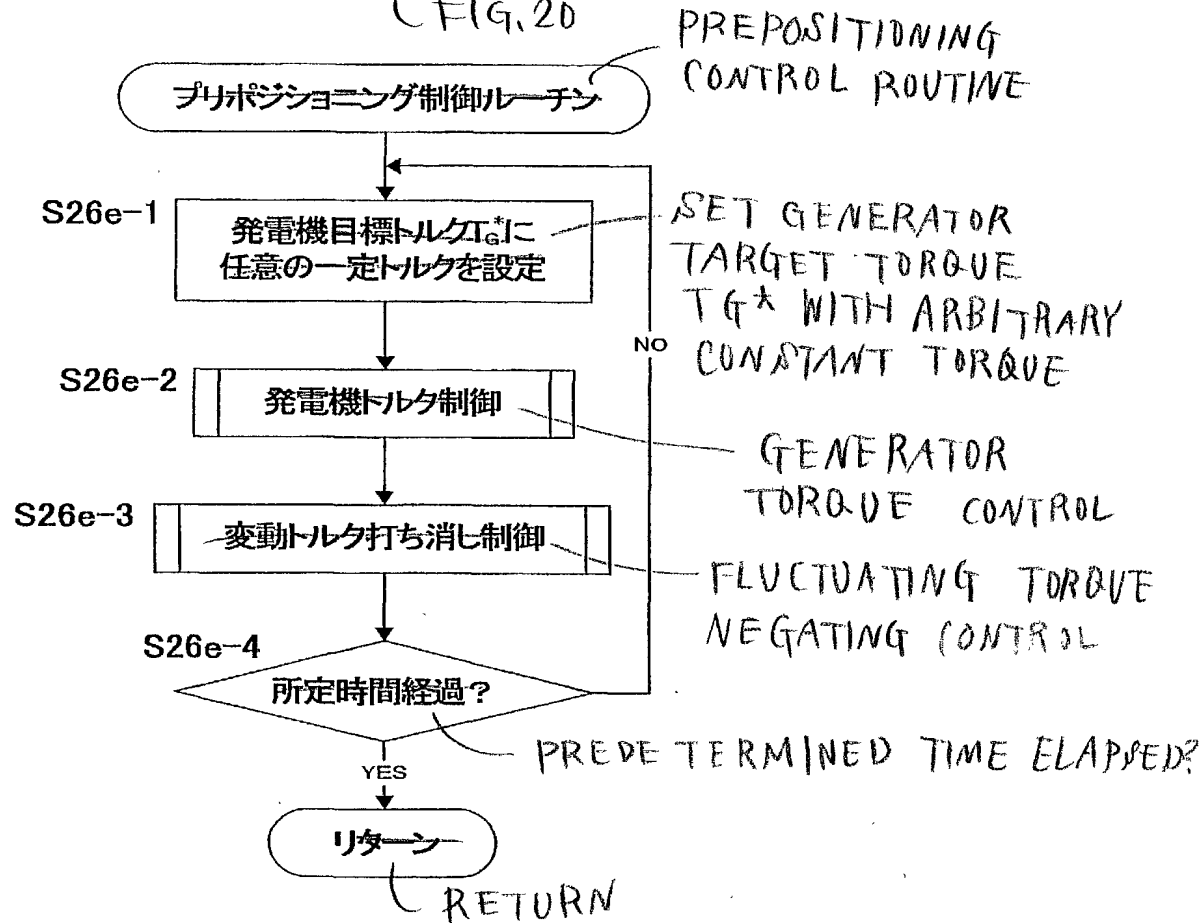


図21 FIG. 21

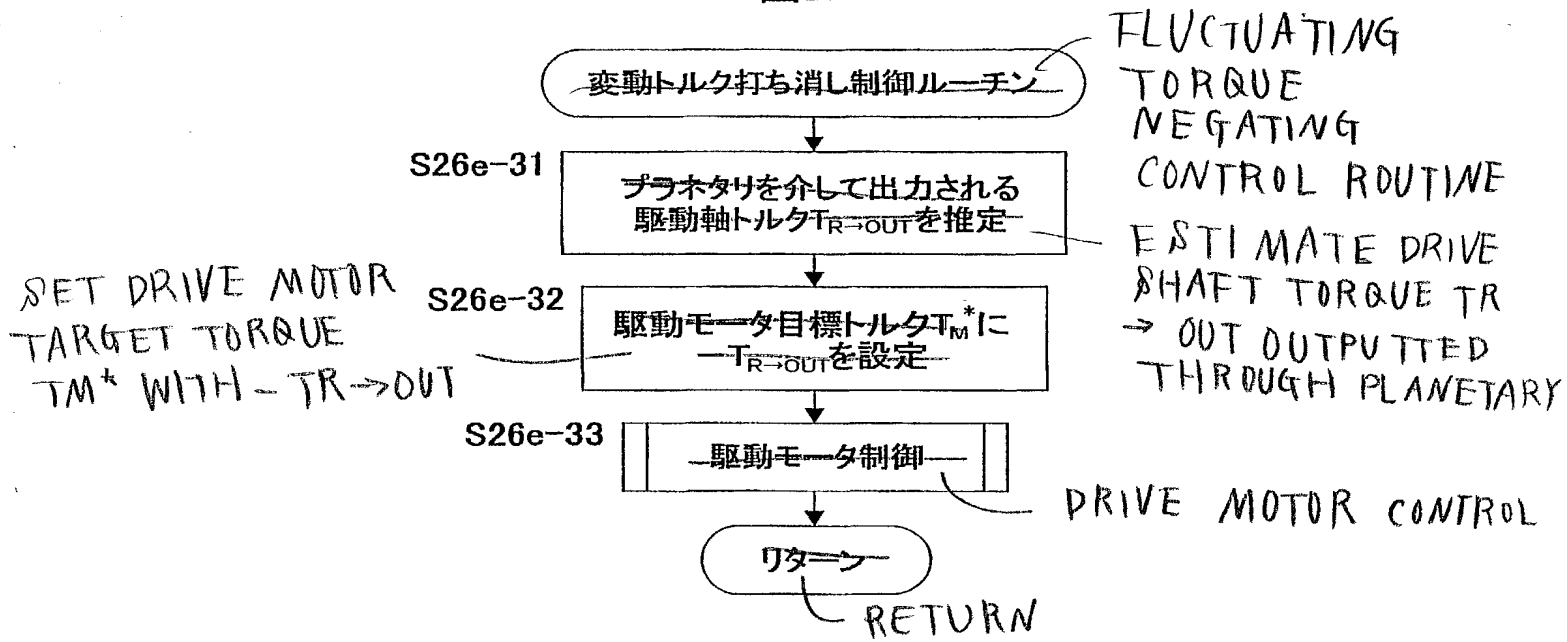


図22 FIG. 22

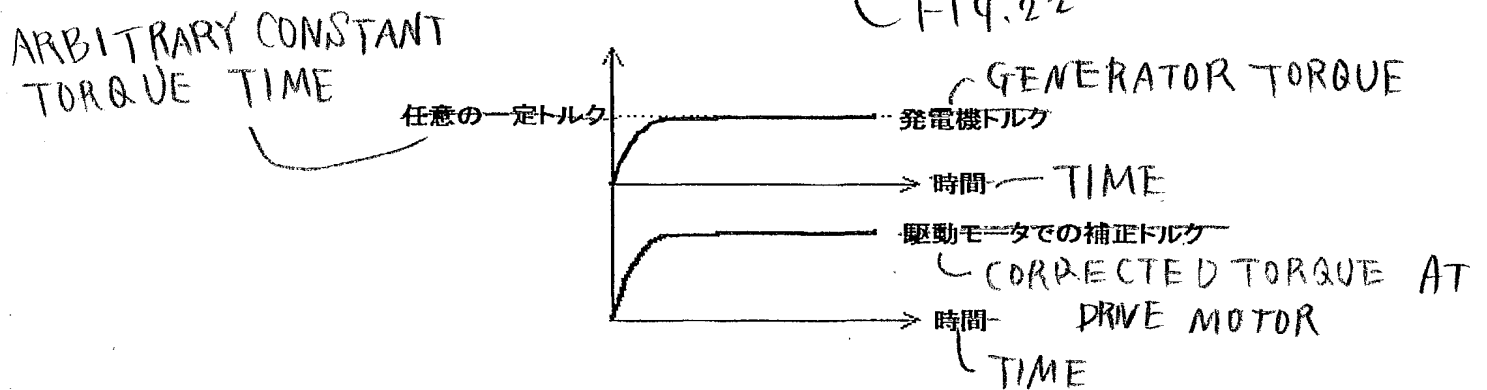


図23 FIG. 23

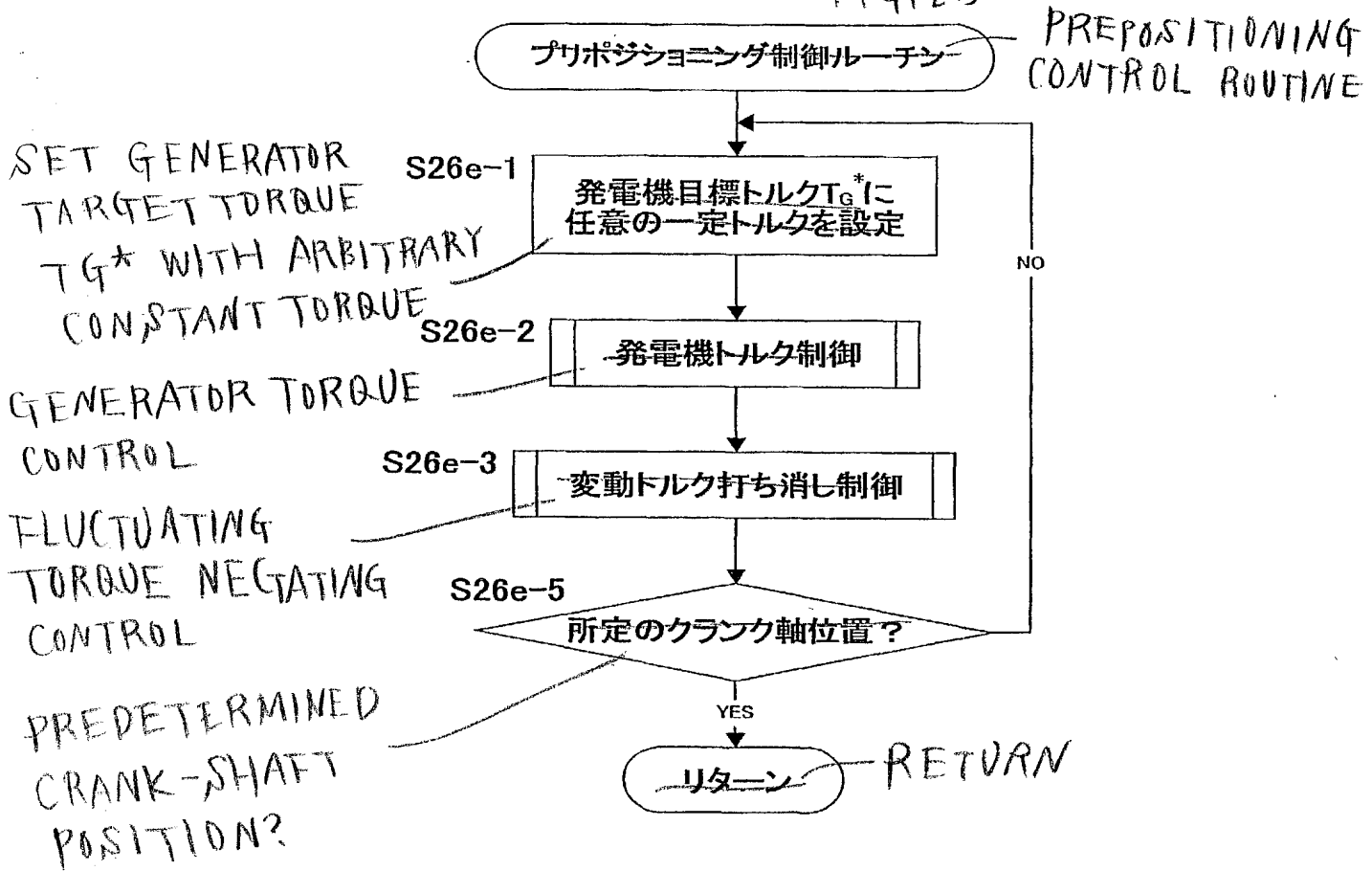


図24 FIG. 24

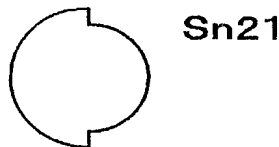


図25 FIG. 25

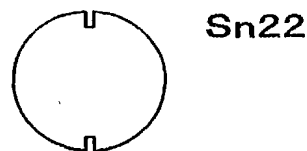
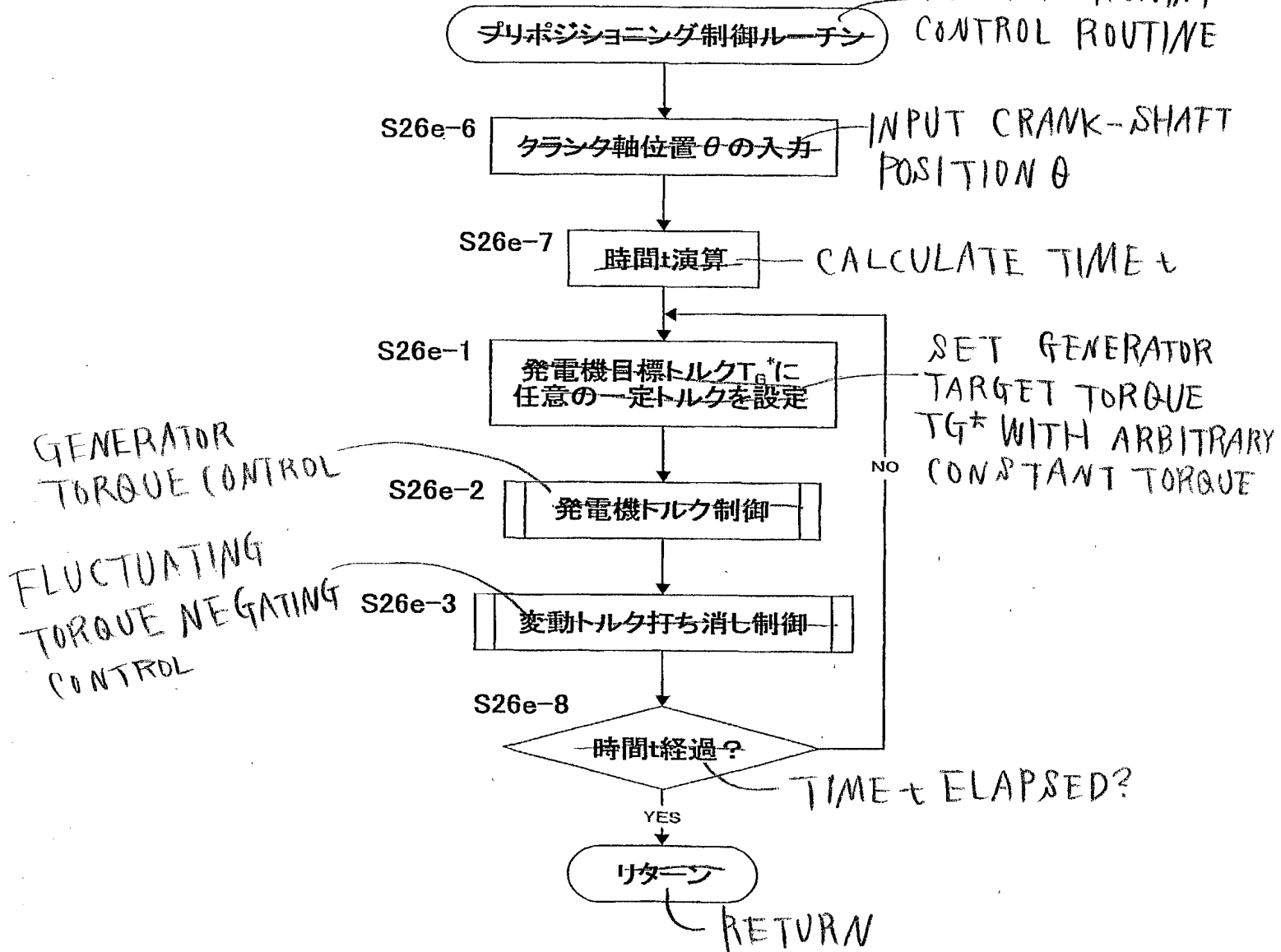
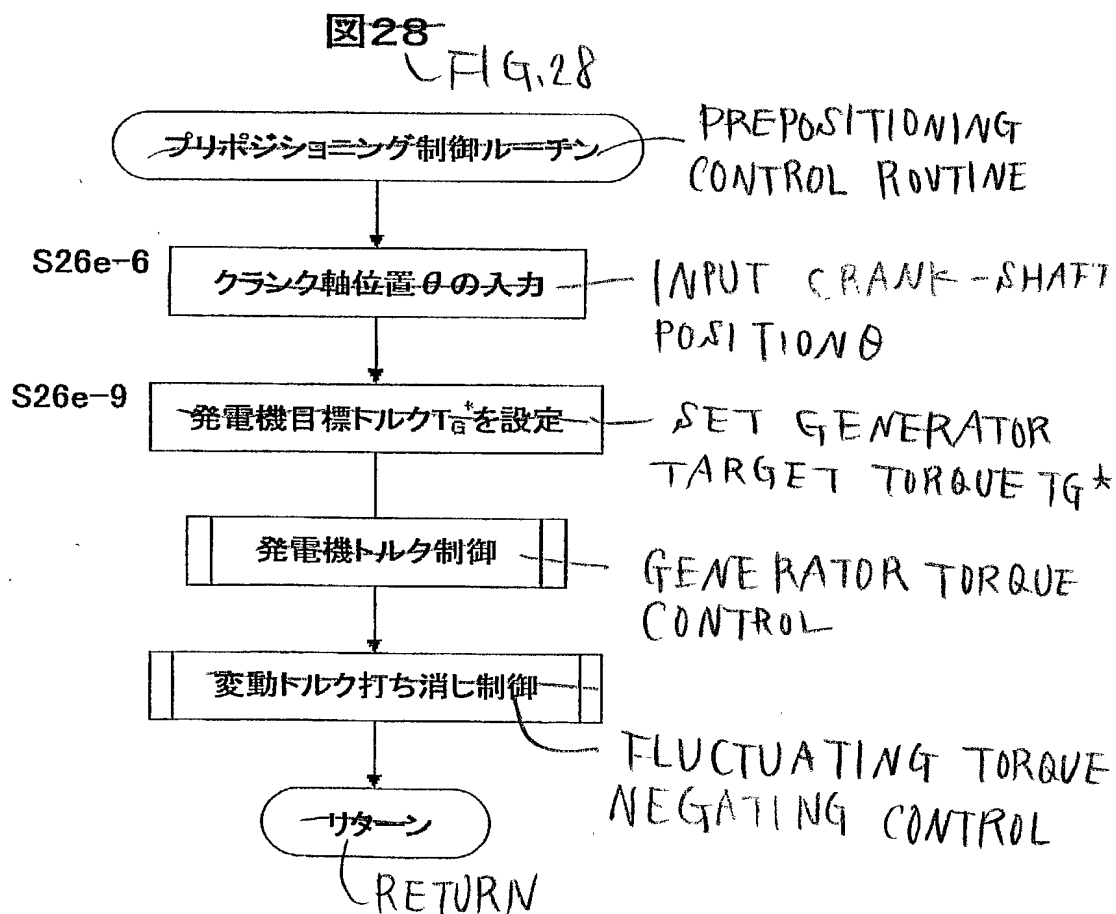
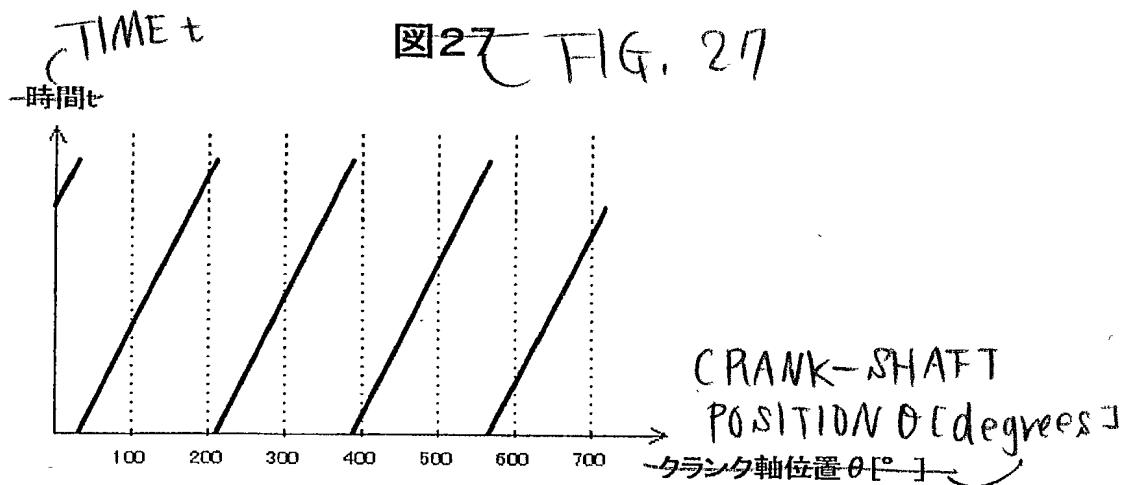


図26

FIG. 26

PREPOSITIONING
CONTROL ROUTINE

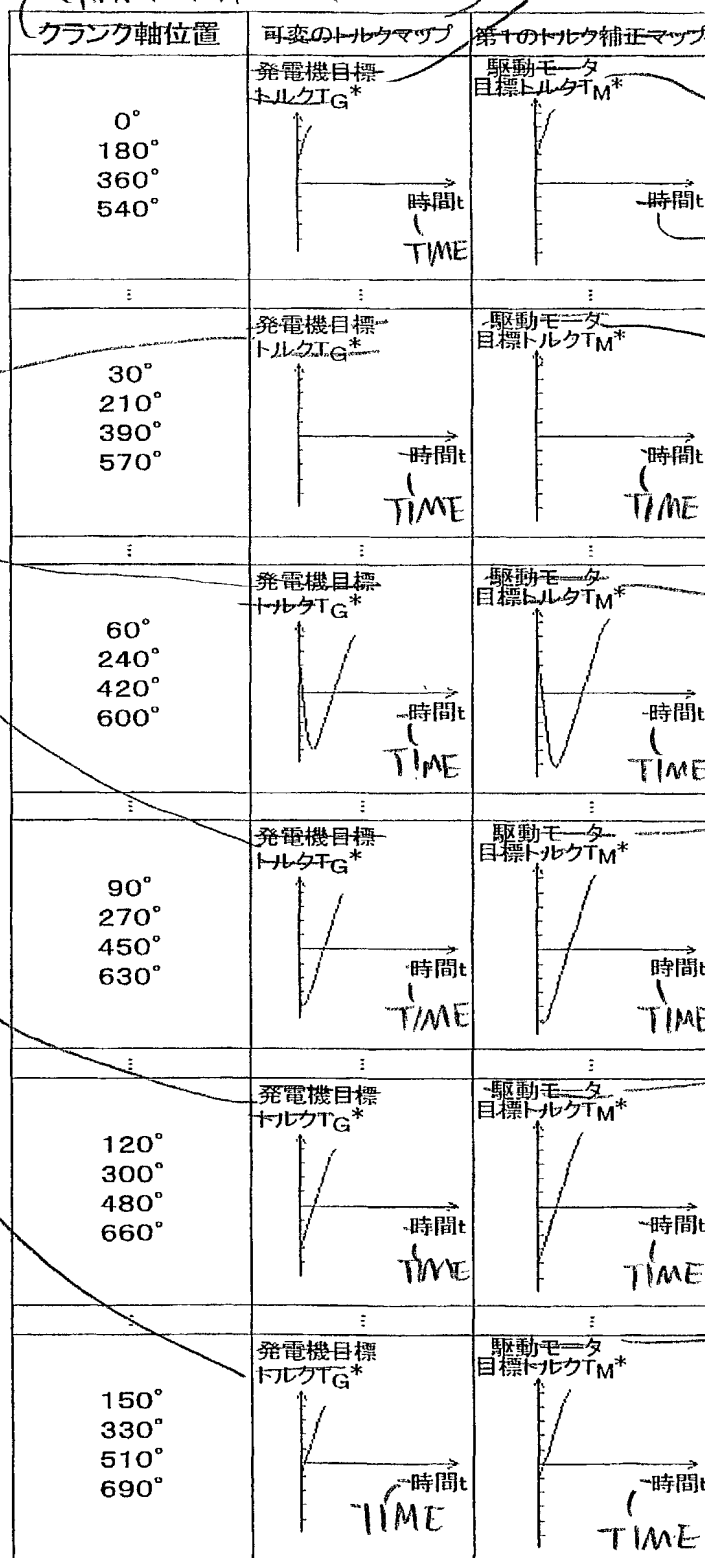




CRANK-SHAFT POSITION

図29

(FIG. 29)



FIRST TORQUE
CORRECTION MAP
DRIVE MOTOR
TARGET TORQUE

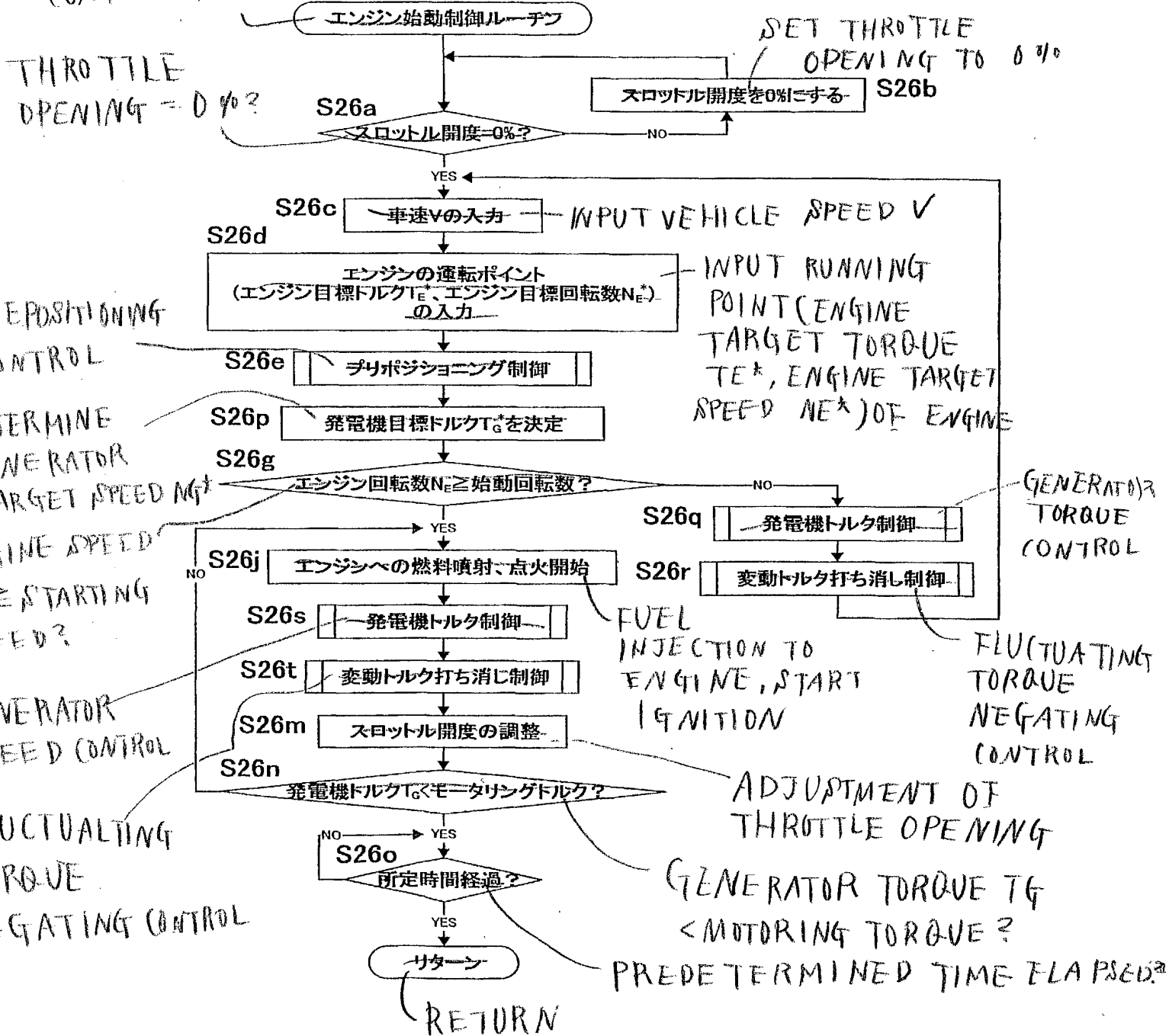
TIME

DRIVE MOTOR
TARGET TORQUE

VARIABLE
TORQUE
MAP

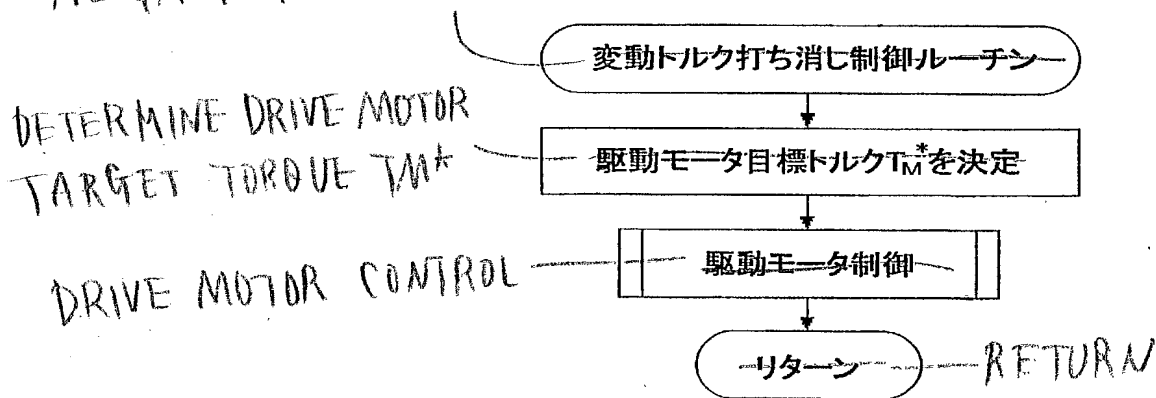
ENGINE START CONTROL ROUTINE

図30 - FIG. 30



FLUCTUATING TORQUE NEGATING CONTROL ROUTINE

FIG. 31
図31



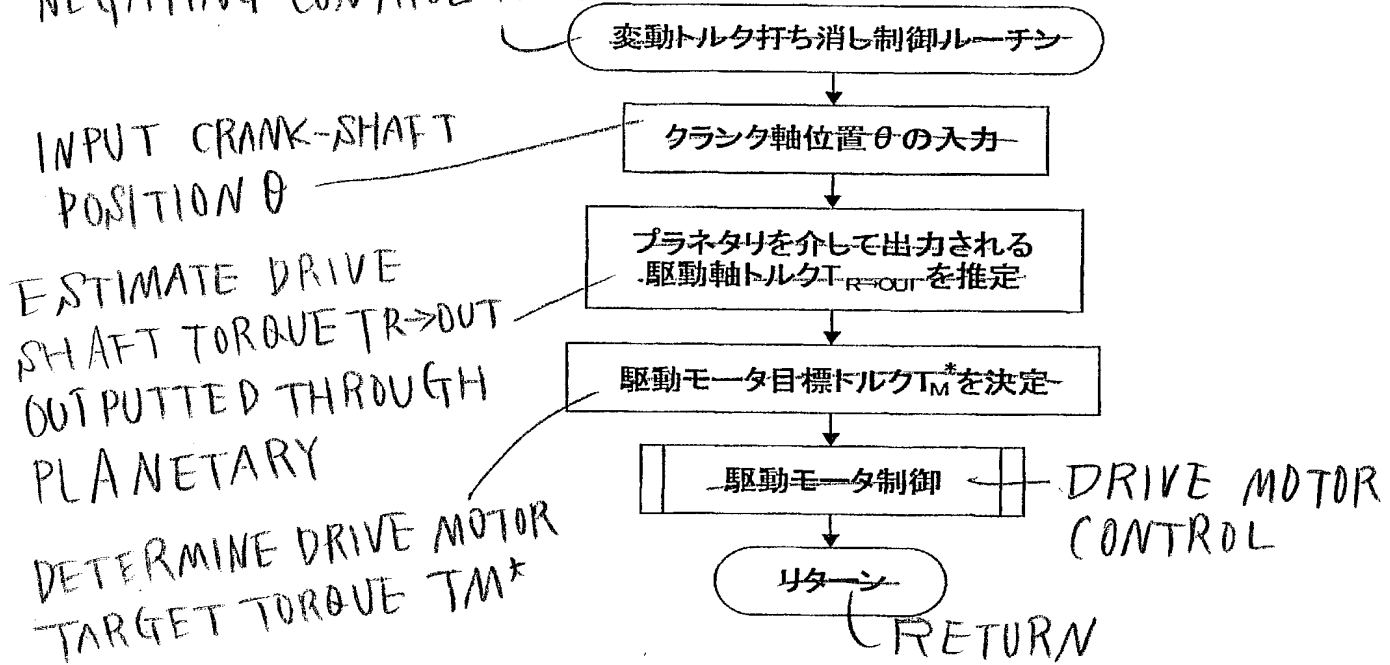
DRIVE MOTOR TARGET TORQUE T_M^*

図32 FIG. 32



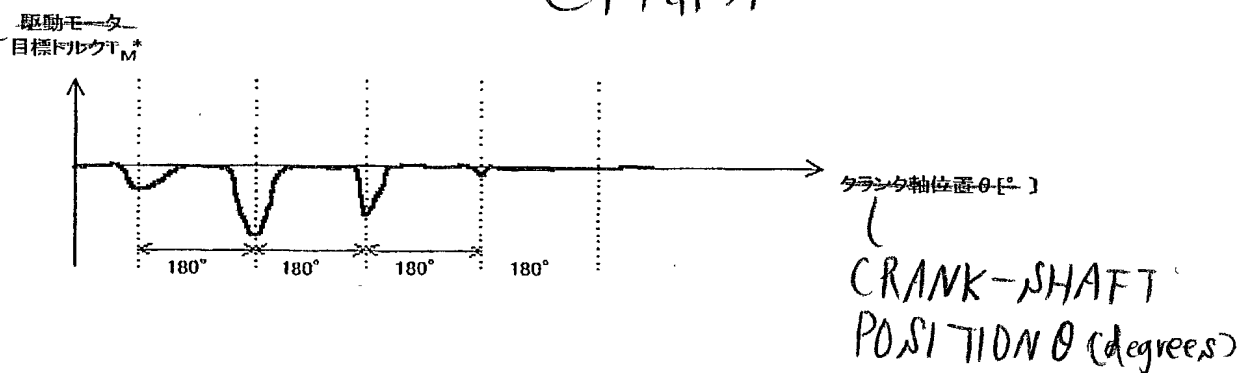
FLUCTUATING TORQUE NEGATING CONTROL ROUTINE

図33 FIG. 33



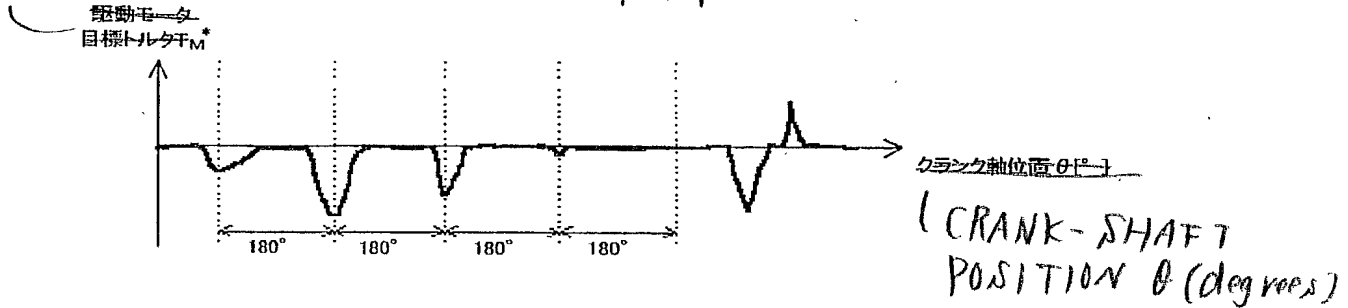
DRIVE MOTOR TARGET TORQUE T_M^*

図34 FIG. 34



DRIVE MOTOR
TARGET TORQUE T_M^*

図35
FIG. 35

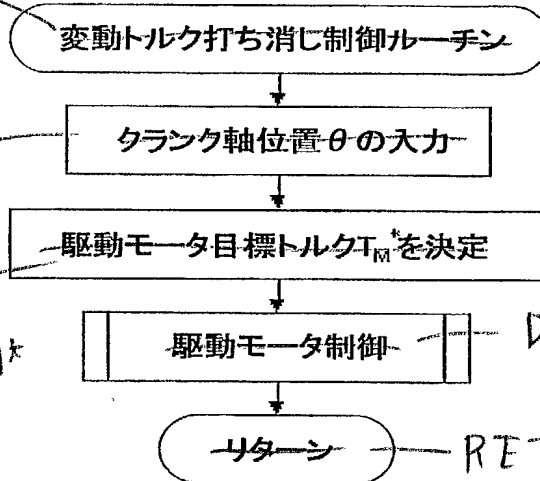


FLUCTUATING
TORQUE NEGATING
CONTROL ROUTINE

図36
FIG. 36

INPUT CRANK-SHAFT
POSITION θ

DETERMINE DRIVE
MOTOR TARGET TORQUE T_M^*



DRIVE MOTOR CONTROL

RETURN

DRIVE MOTOR TARGET TORQUE T_M^*

図37
FIG. 37

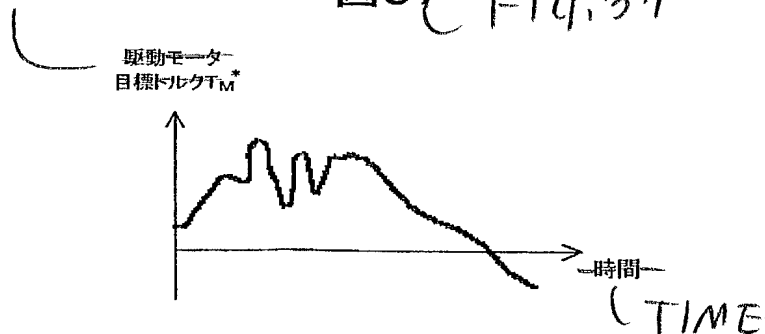


図38

(FIG. 38)

ENGINE START
CONTROL ROUTINE

THROTTLE OPENING = 0%?

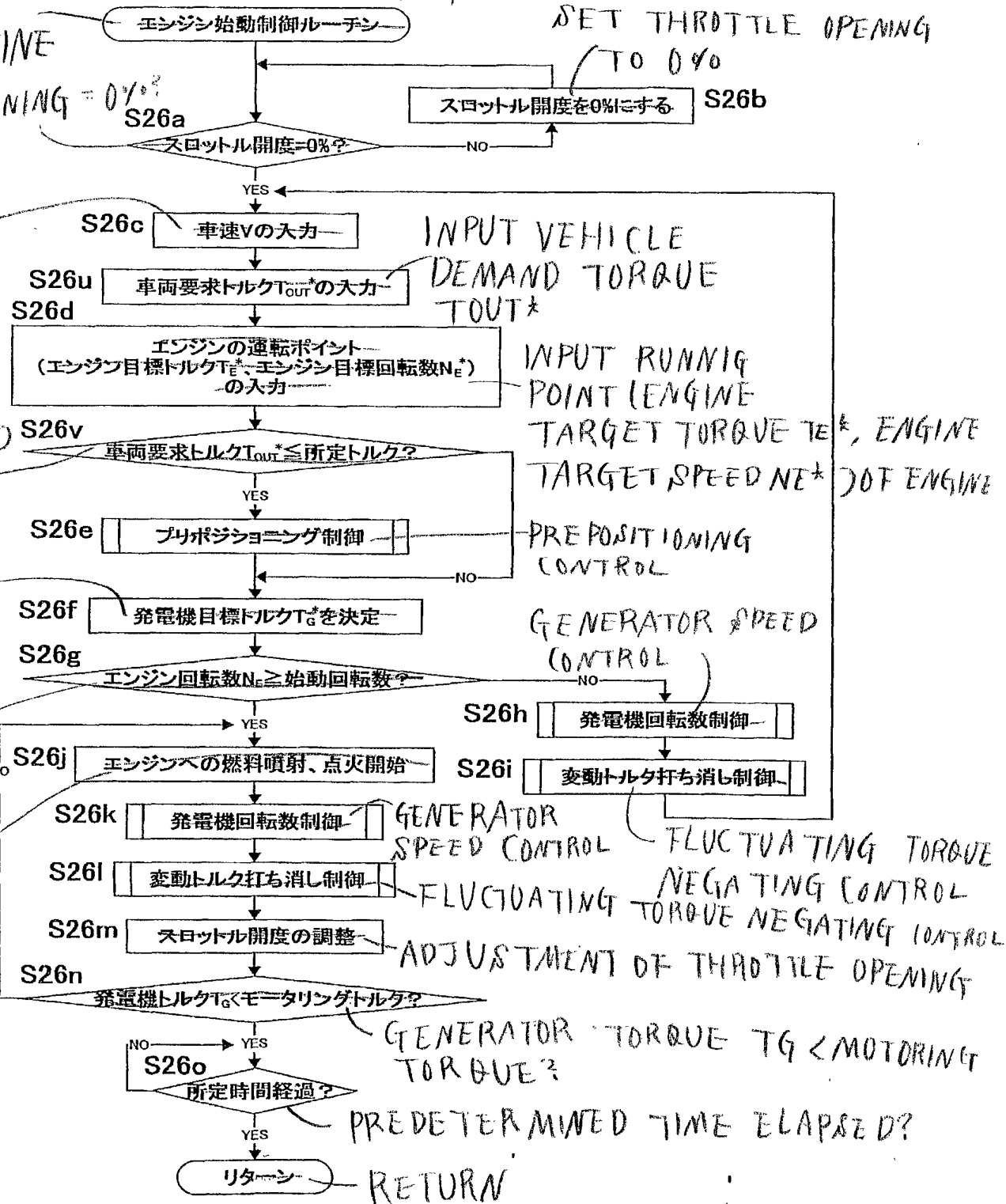
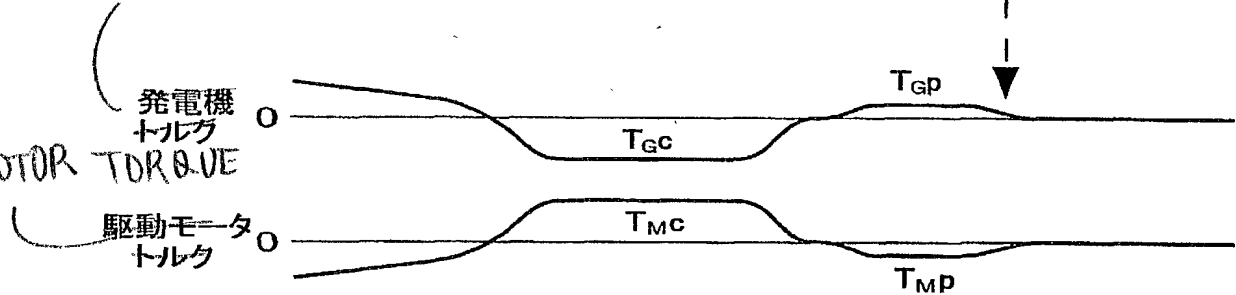
INPUT VEHICLE
SPEED VVEHICLE DEMAND
TORQUE T_{OUT}^*
 \leq PREDETERMINED
TORQUE?DETERMINE
GENERATOR
TARGET SPEED
 T_G^* ENGINE SPEED
 $N_E \geq$ STARTING
SPEED?FUEL INJECTION
TO ENGINE,
START IGNITION

図39

FIG. 39

GENERATOR TORQUE

DRIVE MOTOR TORQUE



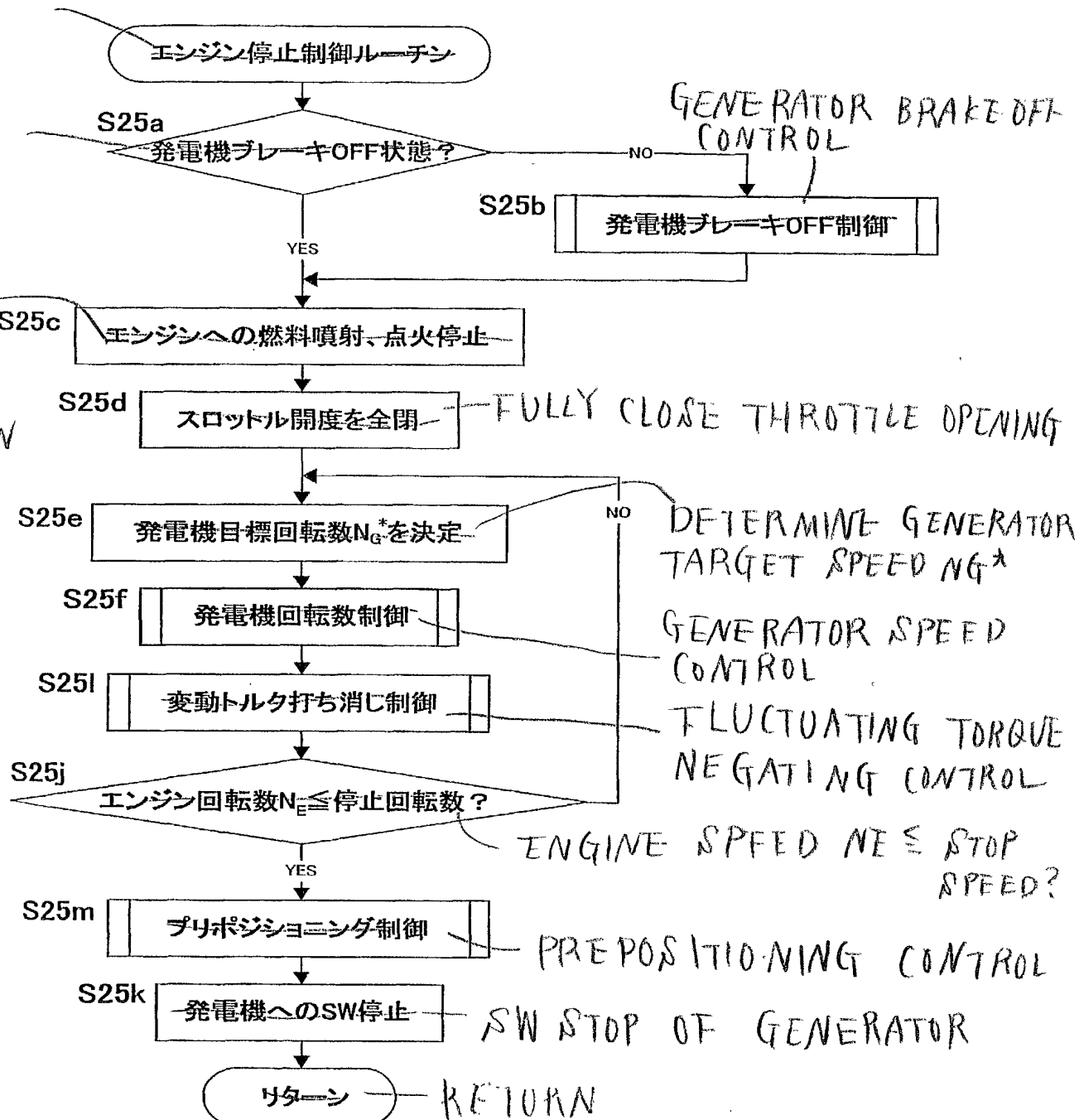
$\theta_e \doteq B$
CNT = T_p

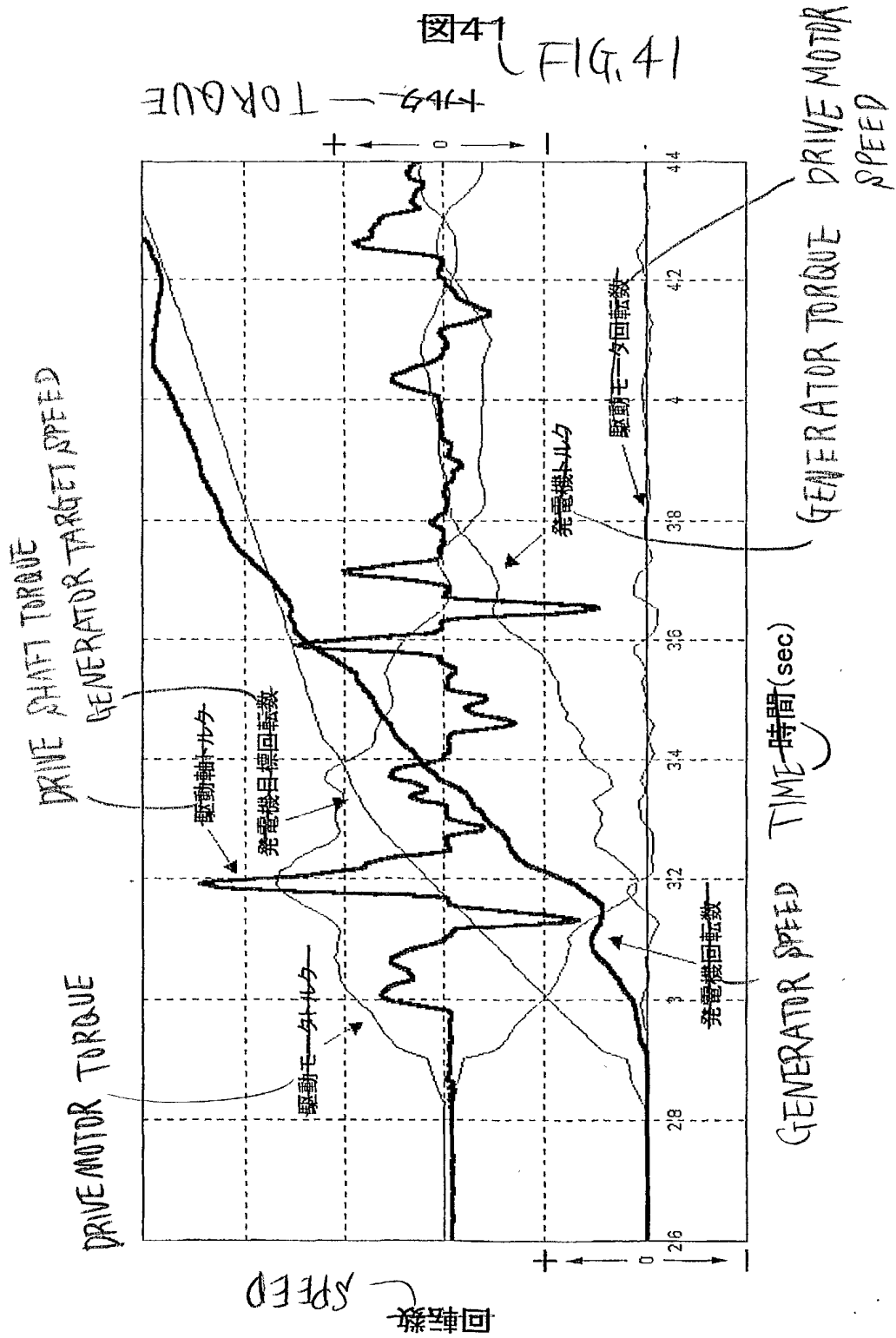
ENGINE SPEED



DRIVE SHAFT TORQUE



ENGINE STOP CONTROL
ROUTINE図40
FIG. 40GENERATOR
BRAKE OFF
STATE?STOP FUEL
INJECTION
TO ENGINE,
STOP IGNITIONGENERATOR BRAKE OFF
CONTROL



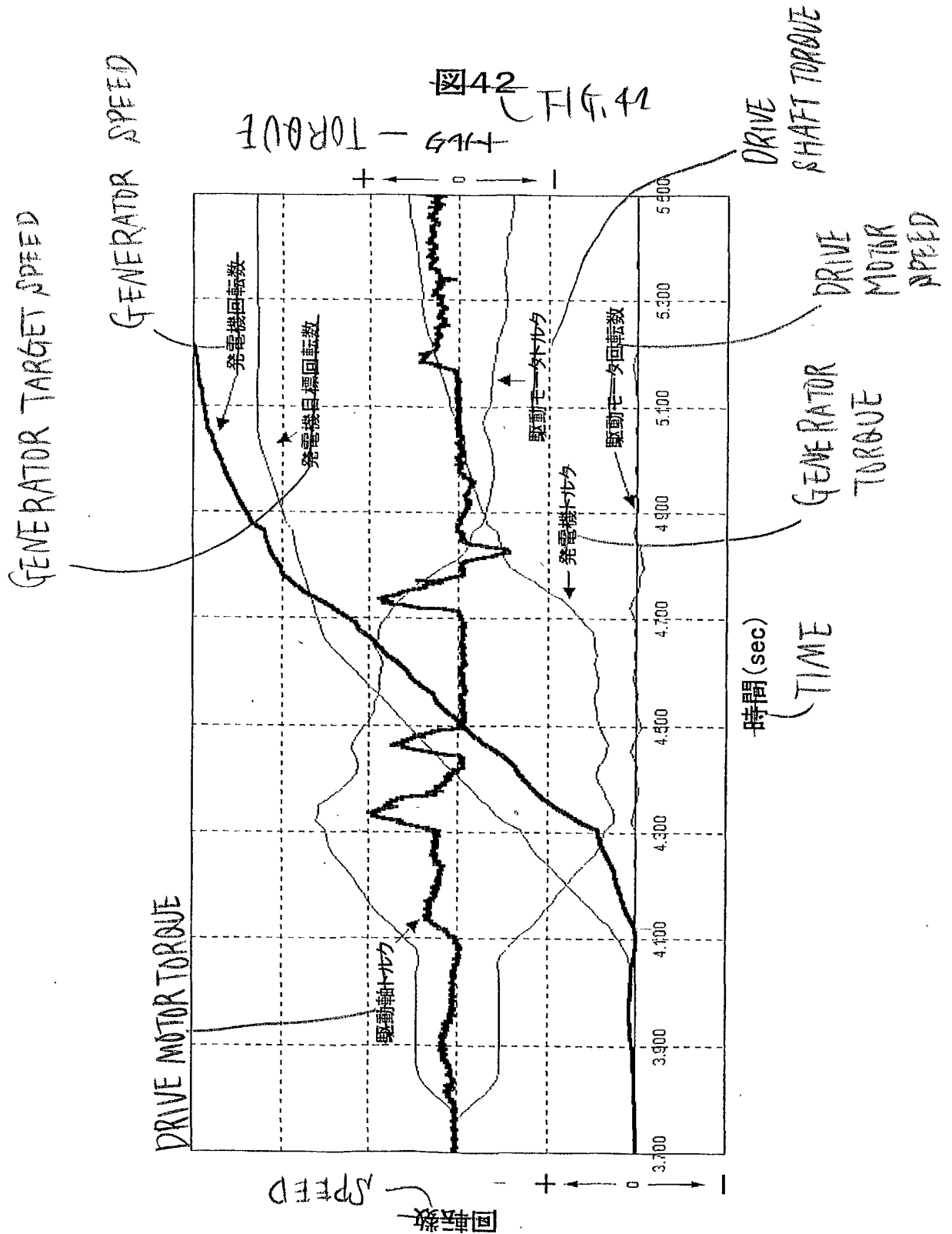


図43

FIG. 43

トルク

